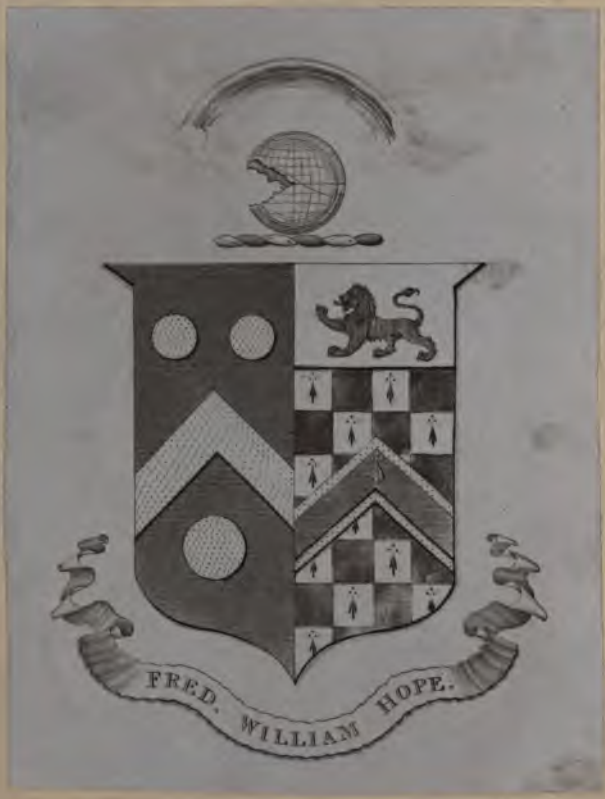

# INTRODUCTORY LECTURES.

Rev. Frederick Wm. Hope M.A. F.L.S. F.G.S. &c. From the Aut

# INTRODUCTORY LECTURES

TO A

## COURSE ON NERVOUS IRRITATION,

## SPINAL AFFECTIONS,

## DISTORTIONS OF THE LIMBS,

## MALFORMATIONS OF THE CHEST,

&c. &c.


DELIVERED BY

J. EVANS RIADORE, Esq. F.L.S.

LECTURER ON SURGERY,
FELLOW OF THE ROYAL COLLEGE OF SURGEONS, LONDON,
&c. &c.



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TO

THE GENTLEMEN

WHO HAVE ATTENDED HIS COURSES OF LECTURES

ON THE

MEDICAL PRACTICE AND THE OPERATIONS

OF SURGERY,

THESE INTRODUCTORY LECTURES

ARE

DEDICATED, WITH MUCH RESPECT,

BY THEIR EVER VERY SINCERE FRIEND,

J. EVANS RIADORE

*73, Harley Street, Cavendish Square,*

1835.

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# INTRODUCTORY LECTURES.

GENTLEMEN,

The importance which pupils attach to the diploma of the Royal College of Surgeons has induced me, in accordance with their anxious feelings and their immediate interest, to confine my usual course of lectures on the principles and practice of surgery in which the Court of Examiners expect candidates to give proofs of their proficiency. I have therefore included the subject of nervous irritation, spinal affections, distortions of the limbs, and malformation of the chest, with their appropriate treatment as suggested to me by my experience and pathological researches, in as comprehensive a form as my humble talents, the abstruseness of these maladies, and the novelty of their arrangement into a systematic course of lectures, will allow.

In 1827, when the Royal College of Surgeons first honoured me by acknowledging my humble pretensions as one of their teachers in the science of surgery, my

time allowed only to make very brief and general observations upon these diseases, which I felt, and greatly regretted, were wholly inadequate to familiarise my pupils with their theory, in a degree commensurate with their vast importance; and now, how far I have succeeded in my anxious wishes to do justice to this very numerous class of diseases, it will be for you hereafter to judge, by comparing my observations with your own experience, and the works of authors; and whenever my opinions may differ from those generally prevailing amongst practitioners, I shall then pursue my invariable custom, of relating cases which I superintended, and give the reason of my inferences, that you may better judge whether they are legitimate or not.

The advantages derived from giving cases are numerous, although their narration will not make so strong an impression on the minds of my class, as the observation of them in the book of nature. Yet when the same occurrences are met with in practice, then will the impression become more vivid, and knowledge arise, as it usually does, from personal experience, throwing light on cases that would otherwise be but obscurely seen.

The circumstance of the public having confided this important branch of the healing art, with, comparatively speaking, a few exceptions, to the superintendence of mere mechanics, and ignorant pretenders, who impose some favoured method of treatment, as by instruments, &c., without knowledge of the structure and

functions of the body, and the nature of the malady, to discriminate whether their use would be advantageous or injurious to the patient, has greatly increased my anxiety to treat upon these maladies comprehensively. I trust, ere long, we shall have a public institution for the reception of the poor, afflicted with bodily infirmities, in order that the advantages of observation may be extended to many instead of a few.

No person can have thoroughly studied his profession without perceiving how capable it is of improvement, and how inadequate the efforts of one, or of a few individuals, must be, towards promoting medical science in general, or in a particular department. The only legitimate way to effect this is by paying strict attention to diseases, and thereby qualifying ourselves to note even their slighter shades of difference from each other, and to discover their natural series and order, so as to form some general arrangement of them. A public receptacle for the poor, afflicted with distortions or deformities, would greatly facilitate these desirable objects, and would, no doubt, be attended with similar happy results to the cause of humanity and science as unquestionably have accrued from the establishment of institutions for any other particular class of diseases; as for instance, those of the eye, which, thirty years ago, were, like bodily deformities, superintended by unprincipled nostrum-mongers; but now, through the aid of philanthropic men in establishing public charities, ophthalmic surgery has sprung from the abyss of perfect ignorance to that

proud eminence it confessedly has now obtained. Hence we have valuable treatises, and systematic and comprehensive works, upon this branch of surgery. A few years ago it was supposed that no person could treat these diseases efficiently, unless he confined his whole attention to them; but be assured the most successful practitioner in any department of the science of the healing art, is he who acquires, by industrious perseverance, a profound knowledge of the basis of our profession, *i. e.* anatomy, physiology, pathology, and therapeutics—whether the disease be of the internal or external organs, for they are all governed by the same pathological laws, since the entire structure and its functions are naturally connected universally and most intimately, from the circumstance of there being for the whole body but one source of nutrition, one centre of circulation, and one of nervous energy. Hence pathological principles are general, which the immortal Shakspeare thus points out—

> " For let our finger ache, and it induces our
> Healthful members to that sense of pain."

No disease of any organ can be properly investigated without reference to some one or more other organs; consequently, it is essentially necessary to have a thorough knowledge of the whole human frame in its healthy state, before we can possibly comprehend all the bearings of any disease, or the changes that take place in a diseased part; also its physiology, which

teaches us the influence of the living principle acting on organized matter, and producing a certain action denominated function, or a part of the animal economy. It is this principle that preserves a due equilibrium, or, as Hunter describes it, harmony of the functions of different organs, whereby we trace actions from their origin to their termination.

Thus a comprehensive knowledge of the general principles of our science, will alone enable the practitioner to acquit himself, in common or abstruse cases, with advantage to the patient and credit to himself, by the facility with which he will reason upon all the symptoms of the case, and rest upon the greatest probabilities. An evil seems to me to have arisen from the artificial division of the healing art into the medical and surgical departments, having caused the attention of the physician and the surgeon to be too exclusively directed to those diseases which custom has arbitrarily allotted to their care. Notwithstanding the nature and causes of spinal diseases and deformities have been generally much better understood within the last few years than formerly; still I fear much remains to be effected by experience, to enable us to comprehend their causes, nature, and endless varied attendants, particularly the resulting constitutional disturbances, and their judicious treatment.

In this and the following prefatory lectures, I shall purposely be diffuse in my observations upon the body in a healthy or diseased state, and upon various circumstances that influence it favourably or otherwise

to health, in order that you may be prepared for my future exposition of these subjects, which I shall here but cursorily notice.

Time, therefore, will only allow me just to make a few observations upon spinal affections, and distortions of the limbs, the number of which affections really appears to increase just in proportion as the physical education of children is laid aside to conform with the present fashion of devoting the whole of their time to mental improvement. In their tender frames serious diseases are often established, which either destroy life or render it painfully distressing, or at least give a tendency to produce these affections in their offspring. On the degree of attention paid to the earliest manifestations of diseases, particularly of bones, cartilages, ligaments, and muscles in young people, must depend the possibility of curing or alleviating them: therefore to enable you to recognise the real nature of a very serious disease, at a period when it is in our power to cure or alleviate it, will be my anxious duty hereafter. Happy am I that I shall be able to show that the diseased spine may be detected at an early period, having characteristic and well-marked symptoms, long before caries or incurvation are established; simple affections of its muscles that arise from various causes, as rheumatism, congenital debility of one set of muscles on either side of the body, or from their unequal action by undue use of the right or left arm, may be also detected. Likewise, the effects of injudicious use of stays, or shoulder straps, bad food and clothing, damp residence, and

many other collateral causes, producing different effects, according to the age and predisposition of the patient. I believe without constitutional predisposition, attitude has not the power of producing diseased curvature of the spine, yet I freely admit that where the disposition exists, a long continuance of the same posture, unquestionably operates, since multiplied experience has shown it in many persons, whose occupations oblige them to maintain the same attitude for many hours daily, and more particularly during growth; Cicero says that "every stage of human life, except the last, is marked "out by certain defined limits, old age alone has no "precise and determinate boundary." We may safely concede that every stage, from the fœtus to the latest period of human life, has its disposition for particular diseases, which slight causes will develop into action; hence we may attempt to classify malformation and distortions of the spine, chest, and limbs, as they usually appear at different periods of life, with the same advantage to the student as other diseases, to avoid the confusion of a general description, without a system in which this principle is embodied. In the following course, I shall adopt this principle as closely as my humble ability, the nature of the maladies, and our knowledge of them will allow, and in as condensed a form for their elucidation and treatment, as is compatible with the duties of a teacher; which are, first, to obtain a knowledge of individual facts, and afterwards to reduce those facts to general principles; and in proportion as the generalization is more complete, and as the number of general principles is diminished, so is the science he

professes rendered more perfect, and easy of comprehension; and in no science is it of greater importance than in our's, in directing and conducting the treatment of the diseases of our fellow beings. In this and the following introductory observations, it will be my object to direct your attention to certain principles, which influence the human system favourably or otherwise, and chiefly to the causes and effect of nervous irritation, a most extensive principle in the animal economy, and of the utmost importance to be well studied, to enable us to make a proper diagnosis of diseases, and to conduct our therapeutic means upon rational principles, upon so complex a machine as the human frame, of which we shall now take a brief general view.

The interior of living animals presents every where a busy scene of movement and activity. Myriads of vital currents meander incessantly through every the minutest part of the solid bones, and through the almost inert and vegetative ligaments. Half of the animal structure is a tissue of tubes of almost invisible minuteness, in which fluids are in continual motion; some carrying into the blood fresh supplies received from without, others conveying nutriment to every part of the system, and others removing the decayed or useless materials from the body, whilst every gland is a busy laboratory, where complicated vital and chemical processes are constantly going on throughout life, preparing the various materials for renovation, by the influence of the ceaseless activity of the nervous system.

There is a continuous circle of renovation and decay,

which must contain within itself the principle of its beginning and its end. Without, however, entering now into the abstruse subject of the physiology of life, it is sufficient for our present purpose to make some general remarks.

*First*,—Upon the formation and growth of bone, cartilage, ligaments, and muscles, before we consider their diseases. Bone in the embryo is exceedingly soft, being principally composed of animal jelly, that gradually becomes hardened into cartilage, and eventually into bone, by the deposition of an earthy substance composed of phosphoric acid and lime. It contains numerous vessels, membranes, and marrow, which in growing animals retain great flexibility, and which in man continue more or less to the age of about twenty; afterwards the component parts of bone become gradually reversed, containing more earthy substance than animal matter, and fewer blood vessels, hence their hardness and rigidity after growth ceases, and their fragility in old age.

In young persons we perceive numerous divisions of bones by cartilage, that in after life become absorbed, and in its place is deposited ossific matter, for their more firm and perfect union; as for instance, the bones of the head, pelvis, &c.

Bones continue through life different in density or firmness, according to their use, which also governs their perfect organisation. Within a given period of fœtal life, all animals that have an ear have all its bones perfected. In man, many of his bones are not per-

fected before the twentieth year, or even later, for they are retarded by weakness and disease, and forwarded by health and strength; in scrofulous children ossification is very slowly carried on, the bones remaining soft and spongy, and incapable of supporting the weight of the body, and thus the limbs and spine become curved for want of a sufficient deposition of that dead and inorganic earthy matter that lies in the interstices of the gelatine, producing the hardness and all the useful properties of bone.

The heads of long bones are always more spongy than the other parts, as is strongly marked in rickety and scrofulous children. These spongy heads are only attached to the shaft by means of cartilage for the first twenty years, and afterwards it is removed by the absorbents, and replaced in exact proportion by the arteries, depositing bone for their future bond of union.

The shafts of bones are always covered by a periosteum, an unyielding, compact, fibrous membrane, tenaciously adhering to them, for the purpose of insertion of muscles, and attachment of the surrounding soft parts, whilst their heads, or articulating extremities, are covered by cartilage, beautifully polished, to avoid the effects of friction, and elastic to prevent jars, and are bound down, to form joints, by ligaments of various dimensions and form. The general or capsular ligament is lined with a membrane that secretes a lubricating fluid, called synovia, to obviate friction, and thereby facilitate motion.

There is a peculiar substance placed between the bodies of the bones of the spine, having the strength of ligaments and elasticity of cartilage, to give strength to the vertebral column, and a high degree of elasticity for convenience of motion, and to obviate concussion on any violent or sudden motion which might disturb the function of the brain.

To bones muscles are attached by tendons; each muscle is made up of fibrillæ, which are connected together by cellular membrane to form fibres; these are collected into fasciculi, to constitute, by their union, a muscle, capable of contraction through the influence alone of nervous energy; for if a nerve, or a branch of a nerve, supplying a particular muscle or muscles, be divided, those muscles become paralised, although duly supplied with scarlet or arterial blood, upon which the nervous energy depend.

The nervous system is in constant activity, conveying to its centre, or radiating to its periphery, the mysterious influence which affects it; thus the muscular system, which is formed solely for motion, particular the involuntary portion of it, is never allowed to be at rest. The intestines, and their heterogeneous contents, are continually moved by this system, like the waves of the sea.

When action of the muscles is required in situations where their bulk would have been inconvenient, their fleshy bodies are placed at some distance from the point of action, to which they are attached by long slender tendons. Thus the fingers, toes, and joints of

the hand and foot, are moved by muscles that are gracefully placed in the calf of the leg, and on the arms.

Each set of muscles has generally an antagonist set, having an opposite action, as the flexors and extensors, adductors and abductors. There is always an exact relation between a joint and the muscles which move it; whatever motion the joint, by its mechanical construction, is capable of performing, that motion the annexed muscles are alone competent to produce. There appears to be an association of animal actions, corresponding with the association of ideas, feelings, and emotions, and which is the foundation of corporeal, as the latter is of mental, habit.

The component parts of man are common to all animals, and the basis of the animal structure, in all its great variety, is formed by three elementary substances, united in various proportions. First, gelatine; second, albumen, of which fibrine may be regarded as a modification; and the third is the pulp of the brain and nervous system. If to these elements are added phosphate of lime, the animal oils, and a few other compounds, which exist in smaller proportions; and considering those as variously compounded of carbon, hydrogen, oxygen, and azote, we have a view of the whole of the constituent parts of the animal machine. Although different organs present so little variety with respect to chemical composition, they differ exceedingly as to their mechanical properties and texture; indeed the peculiar functions of every living organ are intimately connected with the peculiarities of its ana-

tomical structure. Not only do different organs differ from each other in their anatomical structure, but the same organ is found to consist of dissimilar parts, possessing various organizations, which are variously connected together, to effect their respective functions. Organs that possess nearly the same chemical composition, vary very greatly in their functions; for instance, the glandular structure of the kidneys and liver, the articular cartilages, and cuticle, are all modifications of albumen.

The cutis, which is a membrane of complex structure and of complex functions, and the simple exhaling membrane of the peritoneum, are almost wholly composed of gelatine. The principal chemical difference between the contractile fibre of a muscle, and the inert fibre of a tendon, is that the former contains a smaller proportion of oxygen, and a larger proportion of azote.

The cerebral pulp, the centre of sensation, and the source of volition, is said by Fourcroy to differ from the albumen, of which glands and many other organs are composed, in little else than in being more highly organized, and in the want of fixed alkali.

Notwithstanding the whole of the animal system may be resolved into certain elementary textures, blended with each other in various proportions, for the formation of organs to produce numerous functions; yet all organs are so dependant on each other, that the animal system may be said to form a circle; and in giving a history of its functions, we may with almost equal propriety begin with any one of them. Although a

knowledge of these elementary textures is of the first importance in anatomical, physiological, and pathological science, still we must blend with the whole, our knowledge of the influence of that mystery, life, which renders the human fœtus incapable of maintaining fœtal life after the lapse of forty weeks; which afterwards produces the phenomena of puberty; which at a still later period, occasions the ossiffication of the arteries, and the diminution of the size and number of the capillary vessels, which regulate those wonderful processes of nutrition and excretion, by means of which new materials are constantly added to our system, and the old materials are separated and removed from it, which limits the life of the silkworm to a single season, while that of the elephant is extended to about a century, and the whale to several centuries. The substance of the living animal is impermeable to the various animal fluids; but let life be extinguished, then we find the bile, the urine, the aqueous humour of the eye, the blood itself, readily penetrating the membranous tunics in which it was previously securely enclosed, before we can detect the most trifling alteration in their texture; these, and numerous other facts, as discolouration of tissues around the coloured particles of blood, in pending recesses, or an increase of watery fluid in the ventricles of the brain, are constantly observed, and often mistaken for the consequences of disease, instead of death.

These phenomena do not seem to be explicable, except on the hypothesis of there being in living bodies something superadded to organization, without which

they would be as incapable of executing their functions as the pendulum of a clock would be of vibrating, or its wheels of revolving, if they were deprived of the spring or weight, in which the cause of their motion resides. Life then is the immediate cause of action, both in animal and vegetable bodies, which are only new modifications of common matter, consisting like itself originally, probably only of a very few kinds; but being variously compounded, they are capable of giving us a variety of impressions, and whilst alive have an internal power of action, by which numerous changes are produced.

In treating of an animal body, we should consider all the operations and effects, both in health and disease, as arising from the principle of life, independent of any chemical or mechanical principle, or modification of animal matter; the two latter principles are only necessary for life to produce action in its variety, and our knowledge of chemistry is only applicable to account for changes in dead matter; therefore life is a principle superadded to some modification of animal matter, and not depending upon this, as some have suggested; for if it did, we should not have death to point out to us what life is, having the same modification of animal matter, as existed before death.

In a living animal, life, with the principle of preservation, exists independent of action in every particle of it; a fresh-laid egg is as much alive as the muscles that now wield my pen; although a fresh egg has no action,

still, when subjected to the influence of a certain degree of temperature, it begins within itself a series of changes, which end in the development of a new animal, having the complex structure of brain and muscles, mucous and serous membranes, and even a skeleton of bones and cartilages, which derive their solidity and firmness entirely from the phosphate of lime belonging to them, although neither in the yolk or the white of the egg, can lime or phosphorus be detected by the chemist, nor can the component parts of the egg shell, carbonate of lime and phosphate of lime, be detected in the hen's food, grain, &c.; the oyster again, forms its shell of nearly similar materials in the sea water, which contains but the most trifling quantity of lime. The seeds and bulbous roots of plants are under parallel circumstances, and trees are frost bound in the winter, and put forth new leaves and blossoms on the return of the warmth of spring, seeds will retain their vitality under favourable circumstances, that is, when the peculiar animate matter is not excited by heat and air into action, for hundreds or even thousands of years; a tulip taken from a vessel in the remains of Pompeii, grew and flowered in this country a year or two ago. Animals that sleep during the winter, as the hedge hog, dormouse, snakes, &c., are rendered torpid by abstracting their heat, in which cases the vital stimuli are not applied, or only weakly so; thus I understand they may be kept alive in that torpid state, without food, for two or three seasons; in the philosophical transactions, there is an account of

snails, which continued alive in a cabinet for seven years, without leaving their shells: fresh eggs may be preserved for a long time by smearing them with a coat of fat.

It appears that only particular forms of matter are capable of being endowed with life, and that water enters largely into the composition of all living bodies. The number of other elements is not more than three or four in the vegetable kingdom, and only about seven or eight in the animal kingdom. In both, carbon predominates; but in the latter there is a large proportion of nitrogen or azote, which for the most part does not exist in vegetables.

The living principle, be it matter, or property of matter, is rendered passive, and actions are suspended; a leech may be frozen into a solid substance, and may be thawed to regain its former activity. A curious illustration of this subject is afforded by the animalcules which occasion the blight in corn, called by farmers the purples, or ear cockle. These animalcules, which are not to be discerned by the naked eye, become distinctly visible when moistened by a little water, and placed on a piece of glass in the field of a microscope. They are seen in constant motion, and even the ova may be detected in the act of escaping from the oviduct. If the moisture be allowed to evaporate, a dry stain is left on the glass, which is scarcely perceptible, but on the addition of a little water, the animalcules revive and move briskly, as before. This experiment was repeated by M. Baüer with the same animalcules, at intervals of

several months, during a period of more than six years, and always presented the same phenomena.

When an egg is subjected to incubation, the albumen, which was not exhausted, remains sweet for a considerable time, but if the egg does not hatch, it becomes putrid in about the same time as any other dead animal matter. A new-laid egg requires a much greater length of time to be frozen than one which is putrid; it also has the power of resisting heat in the like manner to a given degree; thus its living principle has the power of resisting, like all other living animal matter, for its preservation, heat, cold, and putrefaction. What we observe in a fresh or living egg, may be regarded as the most simple principle of life, for action of parts is the result of life upon more perfect development of organization, that particularly distinguishes the living animal from common matter.

Life in its active state exists nowhere except where there is access to the atmospheric air. Fish and various mollusca inhabit the bottom of the ocean, but their life is maintained by the air which is retained in the water. It appears that the air acts only upon the circulating blood of the various orders of animals, through their lungs, gills, or skin. Thus a certain portion of oxygen gas disappears from the inhaled air, and in its place is found an equal volume of carbonic acid gas. In red-blooded animals, the blood, so exposed to the air, becomes of a bright scarlet, and continues so in its passage through the arteries, and in its return through the veins to the heart it becomes black, and no longer capable of supporting the life and sensibility of the animal body;

consequently it is evident that the blood in respiration acquires something of the first importance in the animal economy, more immediately necessary than food. The blood of an animal is kept in constant motion, and seems to hold an intermediate state between the dead matter of the external world, and the substance of the living body. From the lowest to the highest in the scale of animation, we observe impressions from without, exciting certain changes within, and giving rise to new actions, and new phenomena, which of course is to be attributed to the properties impressed on living matter, which are different from the properties of inorganic bodies. It seems that certain substances, which we are in the habit of regarding as simple matter when exposed to the action of the living organs, are capable of assuming new characters, and of being transformed into each other. The corn and hay on which a horse is fed, afford only a minute trace of phosphorus; yet phosphorus is found abundantly in his urine, and in the earthy part of his bones. Again, the egg contains a yolk floating in a transparent fluid, which is pure albumen as well as the yolk, in which however a small proportion of oily matter exist without either lime or phosphorus; yet, by subjecting the egg to a certain heat, all these substances, and much more, are readily formed. There is no example of a being possessed of life, which has precisely the same structure and the same functions in the early as in the advanced stages of its existence. Both plants and animals contain within themselves the principles of their own growth, and of

their own decay and dissolution. Compare the young oak, just bursting from the acorn, with the tree which, after the lapse of centuries, is seen with a hollowed trunk and withered branches, scarcely capable of bringing forth in the spring an imperfect foliage. Compare the infant child with the old man; or the caterpillar, which has just quitted its shell, with the chrysalis or butterfly. A constant series of minute and gradual changes works these strange conversions, and maintains the identity of what might otherwise be regarded as wholly different creatures. The condition of the individual is never stationary, but his progress is not uniform; and for the most part the changes which constitute his formation and growth, succeed each other more rapidly than those which mark his approach to the termination of existence. These changes, however, striking as they are, are more limited than on the first view they appear to be. The vital power may undergo various modifications, but essentially they are the same in the fœtus as in the adult man. The different organs may become developed, and may be called into action at different periods; but no new organs are formed, and the rudiments of those which exist in mature age may be traced in the young animal, or vegetable, as soon as it has acquired sufficient magnitude to admit of anatomical examination. The wings of the butterfly are enclosed within the integuments of the caterpillar: the lungs of the frog may be discovered in the tadpole. The bulbous root of the tulip contains the miniature flower and leaves of the ensuing year completely formed,

and it is said that the future plant, perfect in all its parts, may be discovered in the germs of the mezereon.

The organs and functions first developed are those which relate to the preservation of the individual; the next in order are those which belong to animal life, by means of which the individual maintains his relations to external objects; and the last are those connected with generation and the preservation of the species. The order in which these functions decay, is the reverse of that in which they are developed; and before we die we may be said, in a physiological as well as in a popular sense, to enter in a second childhood; since the functions which continue to be performed up to the period of the extinction of our corporeal frame, are those which are the first to display themselves in the infant. Throughout every part of nature, we find not only that the component parts of living bodies require to be constantly renewed, but that the individuals themselves are constructed so as to enjoy existence during only a limited period of time. On every side we see them return to the condition of dead matter, exhausted by old age, or destroyed prematurely from accidental causes. The mysterious function of generation supplies the new individuals, which are to take the place of those which have perished, and by means of which the continuance of the species is effected. But does animation ever begin to exist where it did not exist before? Is there any process independent of generation by which inorganic matter can of itself become endowed with the living principle? In the interior of the earth we find the bones and shells

of innumerable races of animals which have ceased to exist. It is reasonable to conclude, that whatever has an end, must have had a beginning; yet, with respect to the higher orders, both of animals and vegetables, it is beyond a doubt that the ordinary laws of nature are insufficient for the production of a new species; and the observations of the physiologist tend to confirm the doctrine of a particular creation. With respect to the origin of those which are lower in the scale of animation, there is not perhaps the same degree of certainty, as for instance various kinds of parasitic animals. Hydatids, &c., found in different parts of animals, the minute eels which are found in vinegar, and the animalcula of singular and various forms, found in stale vegetable and animal infusions, possessing the power of locomotion, and exhibiting other characters of life, such facts as these may almost induce us to believe that there is in nature the power of forming the lower orders of living beings by an equivocal generation, and that dead matter is, under certain circumstances, capable of bursting into life where life did not before exist. However, the circumstances which have been already mentioned, respecting the microscopic animalcules which occasion one species of blight in corn, show for what a length of time the living principles may remain in a dormant state, and possibly the ova of certain minute creatures are too small to be cognizable to our senses by the use of a microscope; or it may be that the ova are capable of retaining the vital principle until an appropriate nidus is thrown by chance to receive them,

to give birth to the young animals. Action occurs in every animal after birth; and as action is fatiguing and exhausting to life, it therefore must have the means of replenishing its powers; consequently every animal has its stomach fitted for digestion, or converting its appropriate food first into chyle and then into blood, and lastly either to augment or replenish the exhaustion of the animal machine. The stomach seems to be the distinguishing principle between the animal and vegetable kingdom; for we are not acquainted with an animal which has not a stomach, or a vegetable which has a stomach; yet vegetables have the power of converting matter into as many and perhaps more qualities than the stomach.

There is a very great connection between the stomach and the economy in general; it is the seat of universal stimuli and irritability, and the centre of sympathy, as the brain is of sensibility. Indeed it may be said to be the seat of action; for when it is affected, the habit in general sympathises with it, and every diseased action has a power of affecting the stomach more or less. The stomach is also affected by the mind, as for instance, vomiting and purging are produced by particular disagreeable news. The stomach also affects the mind; that induced one of the Roman Generals to observe, that there never was a hero with a sick stomach; and Shakspeare says—

"We are not ourselves,
When nature, being oppressed, commands the mind
To suffer with the body."—*King Lear.*

Fright and rage produce palpitation of the heart, tremour of the tongue, and shaking of the knees. In diseases, the brain and stomach seem most intimately connected by sympathy with each other.

Life and action require for their continuance, sleep, which is as essentially necessary as food, and fills up about one-third of the life of an animal, to restore the nervous energy, which becomes exhausted below par, by sensation, muscular and mental action, during which rest it again becomes natural to its habits distributed over the system.

Sleep is an annihilation of memory, and all voluntary action; we are, in fact, then in a state of non-existence with respect to ourselves. Sensation, however, is not always lost; therefore the mind is often thinking, and is what we call dreaming. Restriction of natural sleep is highly injurious, it renders the system irritable and more susceptible to diseases, and increases their virulence. Thus persons whose rest is much broken, or insufficient, suffer much more from diseases or accidents than others do, and require peculiar treatment.

All organs have certain functions to perform, which they are only enabled to do by the influence of nervous energy, supplied to them by the distribution of nerves from the brain and spinal marrow. Nerves preserve the motion of muscular fibres, they constitute the immediate organs of sensation, and convey impressions made upon them to the mind; and the mind has also the power, by similar means, of conveying sensation to the body.

The susceptibility of an organ to the influence of the nerves is called its irritability, and pervades every particle of the body in various degrees; irritability is indispensable to life, because it is essential to the functions of those organs upon which life depends; yet parts of the body and their functions may be dispensed with. Viewed, however, as a whole, the animal body cannot be divested of irritability while it has the power of self-preservation; by what destroys this power, the universal irritation is destroyed, and nothing else short of it. Irritability then is a necessary inherent property of the living system, showing itself in different organs, according to their required functions; in some sensation, in others motion; in some a combination of these, and in others a result of such modifications of sensation and motion as escape our powers of perception, except in their effects; it is possessed by different individuals in various degrees, and susceptible in all of infinite modifications, by the several circumstances which affect the mind or body, directly or indirectly Many of which agents it will be hereafter my anxious duty to direct your attention to in a state of health, and particularly in a state of organic disease, or one approaching to it, which we shall consider under the head of morbid irritability, in contradistinction to that which is proper, inherent, and necessary to every organ, for the continuance of life and action in the whole body.

Irritability is that extensive and abstruse principle which renders every animal susceptible of impression, from internal or external causes, to the production of

actions. Actions then are consequences of a disposition in the brain, to act from impressions made by appropriate stimuli to an organ. A disposition is an impression on the brain, inducing as an effect, inclination in the body to act. The brain has no power of action in itself, but it has the power of setting other parts in action ; hence disposition is the property of the brain, and as soon as action commences in any part of the body, the disposition of the brain is lost. Susceptibility, disposition, and action, are all different, and the latter is the third effect, the result of the two former, for the body cannot be said to feel, but impression is conveyed by the nerves from the body to the brain, and again reflected to the muscles, causing them to act.

To produce an ultimate compound effect, there must be a succession of actions preceding one another, each acting as a stimulus to the succeeding action, which in some parts are almost immediate after each other, as in the heart. The heart and the diaphragm, as well as many other parts of the body, are involuntary muscles which act through a long life unweariedly, whilst voluntary muscles are influenced by the will to action, and soon become fatigued, requiring rest, except under certain states of the brain, during madness or fever, when they will act apparently unwearied for a long time, and in some instances become apparently involuntary in their action. Although nerves have no power of action in themselves, or of carrying nourishment, still they are necessary for the action of all parts, and for the continuance of their natural bulk, as is

proved to us by the division of a trunk or trunks of nerves going into a part, for that part loses, in consequence, its sensation and voluntary motion, and wastes, or shrinks, because the will cannot call it into action. It is a law that the strength and size of muscles increase in proportion to their use, consequently the less they are used, the more liable to waste, and the same may be said of the mind, which is a consequence of organisation, endowed with life, or the functions of the mental organs. Injuries, or disease of these organs confirm, in my opinion, this theory.

Modern research has examined, with much care and ability, the functions of the nervous system, and avoiding the rock upon which earlier inquirers have been wrecked, has unquestionably added much that is valuable to the stock of human knowledge. The nature of that unknown power, or principle, by which the body is first enabled to perform living functions, has escaped, indeed, as probably it ever will escape, the eye of human intellect; but the laws by which the different systems act, and the sympathies by which they are combined, are, in many respects, ascertained. Considerable, however, as the acquisitions are, and certain, so far as at present we know, the deductions, scarcely any use seems to have been made of them in the practice of medicine, and in the investigation of disease. If, however, the nervous system is more or less connected with every function of the animal body—if the circulation of the blood, the phenomena of respiration, and the operations of the intellect, cannot be carried on without

its intervention; the manner in which it is disregarded, cannot but be a most important defect. It has, perhaps, in a great measure, arisen from always contemplating the brain as acted upon by the circulation, and never reversing the order of review. But, throughout, it should never be forgotten, that the animal functions operate in a circle; that the obstruction may begin in any part, may thence be communicated to the rest, and these may injuriously re-act upon the original portion.

Having made these very general observations upon irritation proper to organs in health, we may now proceed to the consideration of morbid irritation.

All bodies are in one of two states, either perfection or imperfection; the first may be called health, the second disease. The physiology of disease is very extensive, and very obscure; every disease is a morbid action produced by a stimulus upon a part endowed with susceptibility of impression, and the power of action: a man has a variety of susceptibilities, which are subject to a variety of impressions, hence the great variety of disease. In some there are peculiar susceptibilities which are implanted in the constitution, and are brought into action by that kind of stimulus to which the constitution is most susceptible; the influence of age, sex, climate, regimen, and condition, by which the habits are determined, together with very many other adventitious circumstances, greatly modify the physical and moral constitution of a patient.

In some, the susceptibility for disease is so strong, as only to require the habitual actions to be stopped, to

constitute disease, by receiving the new impression; thus a blow will produce cancer in one person, and fungus hæmatodes in another, and so forth; in short a perversion of natural actions constitutes disease.

Every constitution is more susceptible of some constitutional or local action than others, a very serious degree of injury and inflammation scarcely disturbs the habitual tranquillity of the animal and vital functions in one case, while the same degree of injury in another subverts and annihilates them. From exposure to cold, we see a variety of effect in different patients; some will have cough, defluxion, pain in the head, and fever; others will have an attack of asthma, spasm, gout, lumbago, or active inflammation in some internal organ. Strength and weakness of the constitution, or of particular organs, cause the variety of effect of the same morbid stimulus upon different habits: a weak organ or constitution is one easily disturbed and over excited in reference to the occasion, and beyond its power to support, which proves, consequently, injurious to the whole. The action of an organ may be morbidly excessive or deficient, independently of disorganisation; this morbid action, at the beginning, may be only occasional, but by custom it often becomes habitual, and thus disorganisation may be established in the part, or possibly in another, for want of the usual excitement from its neighbouring organ to fulfil its natural function; for instance, when the liver fails in secreting in quantity or quality proper bile, the natural stimulant of the bowels to peristaltic action, they become torpid, this

torpidity of the bowels will again affect some other organ or more, according to their predisposition; thus some of the following symptoms are frequently brought on, transient faintness, giddiness, and dimness of sight, noise in the ears, and a feeling of pressure upon the crown of the head, and impatience of the usual weight of the head covering, with cold feet and flatulent bowels, which symptoms alarm the robust, the delicate, young and old patients, with an idea of having a determination of blood to the head, threatening apoplexy. These cases are exceedingly common in practice under forty, and particularly from twenty to thirty years of age, and are more prevalent during warm weather, for reasons that will be hereafter pointed out; many of these patients that consult their medical attendants, are freely bled in the arm, and leeched or cupped about the head, and blistered on the nape of the neck, with probably the application of cold lotions to the head, and well drenched with aperient medicines, and put upon low slop diet, without any regard to their former habits; and thus they are made ill, very conscientiously on the part of the medical attendant, I am well assured, from the misconception in which he has been taught to consider and treat these cases; and very satisfactorily to the patient, from his conviction that he had threatening symptoms of apoplexy, requiring active measures, the effects of which for three or four weeks he gladly endures, to save himself from imaginary danger of immediate death. I am sorry to be under the necessity to make observations to destroy this harmony between

them, from conviction that it is founded upon false principles, equally dangerous to the health of the patient, and the reputation of the surgeon, notwithstanding it is presumptively asserted that, when these cases do well, their lives were saved by bleeding, &c., and when they die under or from the treatment, it is then said to be the will of God ; and when they recover before a medical man arrives, by the aid of some brandy and water, or by lying quietly down, it is then only faintness, and I would say as a general rule, this treatment would be very judicious. Those scare-crows to the profession, and to the public apoplectic cases are, according to my observations, fortunately very rare indeed. It appears that the subjects of apoplexy are, with very few exceptions, above forty years old, and that fat and lean people, with long or short necks, are equally subject to it, and that the attack is very rarely, if ever fatal in less than four or six hours, and generally much longer, whether they are bled or not. In those cases that I have had an opportunity to examine the brain, I have invariably found that the arteries were diseased, and that the fit was the consequence of some branch having given way, oozing out blood, or serum ; in either case, the usual symptoms of apoplexy come on, but much sooner when blood is thrown out, than when it is serum ; the latter being more gradual in its escape, which accounts for the slow manner the symptoms of apoplexy reach their acme in some cases.

I reason that bleeding in these cases can do but little, if any good, from the fact of having observed and heard

of many more cases considered to be apoplectic terminating favourably without the aid of that operation, than with it, and from conviction that the adult brain, in a case of recent effusion of blood into its substance, can contain but triflingly more blood than it did before, because the effused blood must occupy an equal space in the substance of the brain as it did in the blood-vessels. This space cannot be formed by the absorbents, because continued pressure is first necessary to destroy the vitality of the parts to be removed, by interrupting the vital stream, the arterial blood, necessary for continued vitality of every minutest portion of the body; nor can the space in so short a period be produced by any kind of medicine, because I am quite satisfied, contrary to the general belief, that neither purgatives, mercury, iodine, hydriodate of potass, or any other, have in the slightest degree a direct effect upon the absorbent vessels, either to increase or lessen their action; indirectly, however, they have upon the same principles as pressure has. Pressure interrupts the circulation of arterial blood, and thereby the deposition of nutritious matter and purgatives act by carrying off the nutriment of the blood, as does also mercury by saliva. Thus the deposition of arterial nutriment is interrupted, and parts least endued with life, as fat, or new formed parts, first fall into that state to be removed by the absorbents; neither have iodine, hydriodate of potass, &c., any influence upon the absorbents, when applied to external parts, or when internally administered.

It is however probable, that alkalines have some influence upon the blood, in rendering it less nourishing to the body: consequently the absorbents would apparently be more active in thinning the body, and their effect would be more particularly observable upon new formed parts; as tumours and scars, which are always less endowed with life than original formed parts, hence I believe the origin of the impression of these medicines having a direct influence upon the absorbents.

In health, the deposition from the arteries is in exact proportion with that which is taken up by the absorbents, except during growth, when deposition slightly overbalances the action of the absorbents, and of course the contrary holds when a person loses weight. I am quite satisfied that we cannot, either by medicines or by mechanical means, directly influence the absorbent system in the slightest degree. Absorbents act under all circumstances alike; their apparent increased action is only the consequence of an increased quantity of matter being prepared for them to take up, by circumstances that either affect the digestive organs, or that carry off the nutriment of food. Indisposition, injuries, purgatives, and fasting, have the same effect; i. e. of destroying the vitality of a greater proportion of matter than occurs under the ordinary state. The effect of starving and over-fatigue is admirably described in the history of Lord Anson's voyage round the world. His men not only became very thin and weak, but their old wounds and fractures that had healed twenty and thirty years before, re-opened, and became

disunited; when the men came on shore, and had plenty of good food and rest, they all rapidly recovered. This part of the history is exceedingly interesting, and proves the correctness of most that I have now advanced.

The space for the effused blood cannot either be formed by compression of the brain, because abstractedly it is totally incapable of allowing that degree of condensation without immediate destruction of life. It is, however, capable of being compressed to a certain degree, which is evidenced by a loss of voluntary motion, and the presence of stupor; but the space is nearly wholly formed by the substance of the brain being pressed against the coats of the blood-vessels, thus occupying the space of their calibre, particularly of the veins, they being less elastic than the arteries. I therefore infer, that the pressure upon the brain is greater surrounding the effusion than elsewhere, yet affecting the whole circulation of the brain more or less.

The brain being enclosed in an unyielding case of bone, occupying with its tissues and fluids the whole of its cavity, and but slightly compressible; it must of necessity be rational to conclude, that nearly an equal space in volume to the effused blood must be closed, so as to interrupt wholly or partially the circulation of the blood in that portion of the brain.

Again, if from an increased nervous energy, greater action in the arteries takes place in transmitting blood through the brain, there must be a proportional activity in the veins to return it to the heart; or, supposing any interruption be applied to the veins of the neck, the

same would instantly be communicated to their origin at the termination of the arteries, and again the impulse is conveyed from the innumerable terminations of the arteries to their origin. The elasticity of the coats of the blood vessels cannot be called into action for want of space in the adult as in the infant, in whom the unclosed fontanels will allow it to a certain degree, and it is possible that a similar action may occur in the adult through some of the foramina in the base of the cranium, but which, if any, must be exceedingly inconsiderable and instantly occupied, when no permanent advantage can be derived, but rather I should infer the contrary. Abstracting blood cannot be carried to an extent to put a stop to the effusion of blood or serum from the blood vessels under such circumstances, nor can it lessen the calibre of the blood vessels in the brain more than in the great toe, when extracted from the arm.

These circumstances fully assure me, that abstraction of blood cannot effect the purpose intended, of removing the pressure; indeed, it is never justifiable in an apoplectic, or in any other fit, but when reaction, and that in an undue degree, is established; performed before, it is as likely to be done when nature is struggling, and but just able to overcome the effect of the pressure, as not, which may destroy the patient's only chance.

Administering aperient medicines at this stage is useless; the stomach, in sympathy with the brain, is too irritable to retain them; and if they are retained, it is

often a symptom of its irritability being destroyed when nothing can influence it, and of the patient's approaching dissolution, rather than a sign of their benign influence.

In cases of convulsive fits, in sympathy of dentition, local bleeding by cupping is judicious, and absolutely necessary for the safety of the child, and for ensuring the operation of aperient medicines so important in these cases, which are totally different from apoplexy, inasmuch as they consist in a sympathetic morbid action, without prior or present disease in the arteries of the brain; besides, in children, the unclosed fontanels will allow congestion of the blood vessels of the brain.

In sudden death from convulsions, I believe that the cause is pressure upon the origin of the nerves, supplying the heart, lungs, and diaphragm, producing a collapse of these important vital organs.

## LECTURE II.

Inflammatory affections of the heart, aorta, and other large bloodvessels in the adult subject, frequently terminate very suddenly, fatally, with or without ossification. I cannot conceive that ossification of the blood vessels abstractedly, is a disease, since it is uniformly found in aged persons, and producing no more inconvenience or danger to them than other effects of age; therefore it should be considered rather a change than a disease, such as continually goes on in a degree more or less in every animal and vegetable matter in a living state, as well as in every other tangible matter.

These cases of sudden death are totally independent of the brain, and are by far the most numerous of those cases that you may have seen or read, of persons dropping suddenly dead after meals, although previously apparently in good health. In this belief I am particularly confirmed by the fact, that I never saw or read of a case, proved afterwards to be apoplexy, where the patient died in less than four hours, and generally the period is much longer. This characteristic mark, together with the senses being partially or wholly destroyed, will serve us as a safe guide to look for the cause of death, being quite in contradistinction to symptoms threatening or terminating in death from affections in the heart, or rupture of a vessel, or cyst of an abscess of the lungs; in which cases consciousness

and the senses remain to the last, as they generally do, in all fatal cases, from hemorrhage, either from arteries or veins, but more particularly from the latter.

The fits or paroxysms arising from affections of the heart are most unquestionably the most common by far, met with in practice terminating fatally; and in these cases, the face often becomes red from the turgidity of its blood vessels; and in cases of faintness from any cause, pain in the head is always experienced on the recovery of the patient, in consequence of the usual pressure of the blood having been temporarily lessened on the brain, which is the usual effect of fainting, and this pain in the head is generally regarded as confirmation of the propriety of bleeding, &c.

It is of very great importance that you should recollect the signs by which you may distinguish various fits of epilepsy, St. Vitus's dance, hysterics, faintings, vertigo, and apoplexy, because their causes are different, and therefore their successful treatment must also be so; and in all, abstraction of blood is exceedingly injudicious, and, in my opinion, dangerous; and even in apoplexy particularly if practised as a matter of course, as it appears to me to be but too generally; nothing but undue vascular reaction can justify that operation, which reaction very rarely supersedes any kind of fit, except apoplexy. To the intelligent practitioner, it can be a matter of no difficulty to distinguish the whole, by signs that I need not here enter into in detail, but suffice it to say, that the quiescent state of the apoplectic patient, together with his stertorous breathing and stupor, will at once characterise

this from other simulating affections. Notwithstanding, I constantly observe that all cases of fits are generally bled, either to please the false impression of its utility on the minds of the public, or that of the surgeon, which custom has brought about.

The great importance that I attach, in a practical sense, to the question of the propriety or non-propriety of bleeding during any kind of fits, has led me to digress somewhat more at length than may perhaps appear judicious, from our subject of morbid irritation.

I noticed the consequence of imperfect functional action of the liver upon other contiguous and remote organs. A similar disordered state, either from too great or too little supply of nervous energy, to any one organ, must affect others more or less, and thereby disturb that harmonious functional action of the whole system that exists in a state of health; the principles thereof are essentially necessary to be well understood, before any one can be a successful practitioner, particularly in those extensive classes of diseases denominated nervous, or functional, or antecedent states to disorganisation.

Every organ has its peculiar irritability, through the medium of the nervous system, and all secretions of the body are also affected by the same medium, so long as these principles neither exceed, nor fall short of, their due or natural proportion, the harmony of the system, resulting from that of its constituent organs, is correctly continued. But by numerous internal and external causes, they are subject to be diminished,

increased, or perverted, so as to constitute a material deviation from health.

Thus we may have morbid irritability, disordered function, or disease of one or more organs, as indigestion, and its concomitant evils of nervous irritability; since all organs are supplied with nerves from the brain and spinal chord, it is reasonable to conceive that one or both are suffering, when the stomach or any other organ is affected; and if this be allowed, the propriety of directing our attention in search of causes to explain the effects, and probably of remedies, to be applied more immediately to these organs, than has hitherto been customary, will not be doubted.

It is now much more generally acknowledged than formerly, that functional must precede organic diseases, consequently, if the nervous system preside over and govern functions, this same system must, in very many instances, be first affected.

The affections which appear to me referable to irritation of the spinal chord, are, perhaps, in their origin, confined to this portion of the nervous system only, because the symptoms are principally confined to the extremities, chest, and abdomen, according to the seat of the irritation in the spinal marrow; but so intimately are the sympathies united, that often a short time only elapses before the brain is also comprehended in the disorder, by reflected sympathy with the stomach and bowels. As to the nature of the irritation, or what is the state of the blood vessels of the part affected,

dissection cannot afford us any information, inasmuch as patients rarely die from maladies of this kind, till the functional has passed into organic disease, which only is observed after death. Hence the fashion of this phlebotomising age of bleeding, purging, and starvation, as if patients had no other affection but actual organic disease, and attended by that bugbear, inflammation, which is ever on the minds of some practitioners, as the exclusive cause of every disturbed state of health, which, from their preconception, they illustrate in their writings and published lectures, to their perfect satisfaction, and as uniformly practise the healing art by the use of the lancet, salts, calomel, foxglove, and gruel, in my opinion, to a degree of wantonness that exceeds any thing in the history of our art, which seems occasionally to have as good a title to that of torturing as of healing; a procedure which neither the great names of the most decided advocates of depletion, nor the fairest evidence, namely, the result of their practise, warrants.

It is not to be expected, that men whose opinions have been formed from the long-continued indulgence of a favourite theory, should very readily change their notions; at the same time, an assumption of superiority is no proof of its existence in the practise of a conjectural art; nor is it consistent in the professors of a science which, from its nature and practise, is eminently calculated to teach us humility. Therefore, since very generally, teachers of medical students scoff the idea of irritation, and treat most diseases with pain as inflam-

matory, it is evident that they must think for themselves before they can distinguish the symptoms of irritation from inflammation, in which it is my anxious wish and pride to assist those pupils who confide in my humble talents, which will not be difficult for me to do, having the authority of that experienced and accurate observer of diseases, Sydenham, whose valuable and very important observations have been but too much neglected by modern practitioners. It is no uncommon thing for a growing girl of delicate health, or a young woman of an irritable temperament, attacked with headache and sickness, difficulty of breathing, cough, fixed or occasional pain in the side, with clammy skin, to be bled, leeched, blistered, purged, and possibly salivated, for an imaginary inflammatory disease, without a vestige of such action, to the serious prolongation of the patient's sufferings, or eventually the destruction of her life, by the consequent general debility and irritability of the nervous system, which again may concentrate itself upon some important organ, according to the susceptibility of the patient's habit; as, for instance, which is a common termination on the lungs in consumption; however far habit may teach a medical practitioner to regard depletion with indifference, he will not so easily succeed in making the patient or her friends believe there is no danger, or that extreme debility is a matter of no consequence, whether produced by bold presumption of assumed philosophy, or the unfeeling wantonness of ignorance, under the flattering appellation

of bold practice ; such a practitioner ever prides himself upon knocking a complaint on the head by copious abstraction of blood, &c. &c.

The extraordinary resemblance between the forms of some nervous disorders, and inflammation of organs, constantly misleads some practitioners into very serious mistakes ; and no doubt reflection, and some experience, are required to convince us of the powers of simulation in these affections, and to enable us to pronounce with satisfactory confidence, whether the symptoms be dependent on inflammatory action, or on that peculiar mobility of the nervous system which will, in such persons, simulate every kind of disease, and, in my opinion, the mechanical or functional derangement of the vertebral column, or its contents, is a common source of nervous and pulmonary complaints, and numerous disorders of the functions of digestion and nutrition. It has often surprised me to observe how much disturbance a very slight affection of the spine could occasion ; such, for instance, as the following symptoms :—hurried respiration, short cough, pain in the side, palpitation of the heart, and a host of other nervous affections, with occasionally even inflammatory action of the heart or of the lungs, and the following fits—St. Vitus's dance, hysterical, fainting, and that considered opprobrious to medical science, epilepsy, all yielding to remedial means directed to the primary cause in the spine.

My practical knowledge of the affections of the spine, and my conviction of its controling influence over the nervous system, and several important organs, has been

the means of directing my attention to the cause of St. Vitus's dance, hysterical, and epilectic fits, which has led me to adopt a successful mode of treatment, even in some severe instances, of many years hopeless continuance.

I will here cursorily relate some epileptic cases that made a strong impression on my mind, and the general symptoms of four other cases, in three of which my mode of treatment has been completely successful: and in the fourth, the advantages already derived promise a similar gratifying termination. I hope you will be prepared to give me your undivided attention during my future lectures, in which I shall describe, in detail, my principles and practise in these and other nervous affections.

About seven years ago my attendance was hurriedly requested by the friends of Miss ———, a fine young lady, who had been, I was given to understand, subject for many years past to epileptic fits, and was then in one of unusual severity, which threatened, to all appearance, her immediate dissolution. When she recovered, I found she had been, at different times, under the care of most of the eminent practitioners in the kingdom, who had pursued nearly alike the common remedial means of depletion, &c., with the usual unhappy result that I had hitherto always met with in my own practice. Consequently I did not attempt any mode of practice, and the family soon afterwards left town to reside in the country; since I have entirely lost sight of them, not however without a deep im-

pression of the case. Soon afterwards I attended, with Mr. Freeman, another severe case that terminated fatally, and a post-mortem examination was minutely made in the presence of that gentleman, Sir Benjamin Brodie, Mr. I. H. Green, and, myself, and as usual in these cases, no very satisfactory cause was detected in the brain or in the spinal chord; but to my mind the spinal theca was more turgid than natural. This circumstance strengthened my impression of the cause in the former case, and I determined to follow up my theory and practice accordingly in the next case that might fall under my care, which soon presented itself in the person of Mr. G. H. D., a gentleman about twenty years old, who had been suffering for about five years, which had totally incapacitated him from following his studies in the law at Edinburgh, where his case had been superintended by some of the most eminent practitioners in that city. He was subsequently brought home to his parents, residing in my neighbourhood, where he received the advice of the family apothecary and some eminent practitioners, and finally, by recommendation of Mr. Price, a scientific and successful practitioner at Margate, he was placed under my medical superintendance. His fits were of long continuance; he tossed his body and limbs, and foamed at the mouth but little, comparatively with some of these cases. I availed myself of the opportunity during an attack, of examining with the stethoscope, and by my ear, the action of the heart and lungs, which I found were scarcely influenced apparently in their functions, which induced me to

conclude that the brain, and the upper portion of the spinal chord, were not the cause. I then examined the abdomen, which I found exceedingly distended, and turbulently noisy. I therefore examined the lower portion of the spine, where I found no external satisfactory clue to account for the distended state, &c. of his bowels; but at a future visit, in the absence of a fit, I gathered from the history of his feelings ample cause to conclude, that the deranged functions of the intestines, kidneys, and bladder, must have depended upon an imperfect supply of nervous energy from the inferior portion of the spinal chord, which freely supplies these organs with nerves. The consequence of this derangement was impaction of the cells of the colon by long retained scybala; I beg to impress upon your memories, never can be removed by saline purgatives, of which he had formerly taken very abundantly, but by the means I employed were removed to an extent that quite astonished me; they continued however to be reformed until their original cause of formation was removed in the spine by counter-irritation, and constitutional treatment that I need not at present dwell upon, since I shall hereafter have occasion minutely to explain in detail my principles and practice that I pursued in this and the following cases; suffice for the present to say, that he was placed under my care in September, and left town for Edinburgh in May the following year to pursue his studies, where he continued under my treatment, by correspondence, and was quite cured of his fits, and of the impetuosity strongly marked in his

case, and restored to health, after experiencing but three or four slight attacks from the time he was put under my care some few years since to the present time. About two months ago I met him in the street, looking, as he said he was, very well; and he has been, I understand, conducting his business of writer to the signet at Edinburgh for some time past, as if nothing ever had been the matter with him.

I confess this case afforded me those gratifying feelings that our profession, upon its successful prosecution, calls forth, I believe more than any other, which stimulated me with increased pleasure to continue my inquiries into the causes of the various forms of nervous affections. These genial feelings are the privilege of every cultivator of the healing art, which I hope you may long individually have abundant cause to rejoice in, unalloyed by an ungrateful reward.

The next case was Miss M———, a young lady in the twenty-third year of her age, who, I was given to understand, had enjoyed good health until about six years and a half ago. During her childhood she had always shown a great precocity of mind, and extraordinary facility in acquiring knowledge of music and languages, in which she was exceedingly proficient. When her health first failed her, she resided with her mother, in Manchester; and I believe, from the history of her symptoms, which her mother described to me very fully, she became dyspeptic and hysterical, apparently from a severe shock she experienced by the sudden death of her father. From this period, she gra-

dually became more indisposed, and much changed in her habits and temper, having her nervous energy irregularly distributed over the system; thus the chylopoietic and pelvic organs became in their functions deranged, and she constantly complained of pain, sometimes severe, in some part or other, frequently shifting, which is characteristic of hysteria, and more generally in her head or side, for which she was frequently, in my opinion, most unwarrantably bled, leeched, cupped, blistered, purged, and partially starved by low slop diet; and all this for imaginary complaints of determination of blood to the head, as it is vulgarly termed, or inflammation in the side, or pleurisy, a sufficient cause, even without the influence of disease, to account for the now established change, from being a fine, animated, amiable young lady, with a vigorous mind and frame, to her present shattered, emaciated, irritable, morose, and really pitiable condition. She continued in this unfortunate state of health for about a year, and then her occasional paroxysms of hysteria were decidedly converted into epileptic fits, and came on, as is usual in epilepsy, whilst she was asleep, which is never the case in any form of hysterical fits or pains. Her mother, sometime after this, was recommended to Liverpool for a change of air and advice, where she was in some degree better treated, by taking for a long time a large quantity of carbonate of iron in treacle, and comparatively but seldom cupped or bled in the arm, without, however, deriving the slightest advantage from the means, a result that I have invariably experienced from

depending solely upon carbonate of iron, notwithstanding its high testimonials; yet I consider it a most valuable adjunct to other measures. She was again removed from Liverpool to London, and here her mother availed herself of the services of eminent practitioners, with no better success; and after some time, hopeless of deriving the long-sought cure from authorised practitioners, she became the prey of unprincipled, avaricious, and ignorant pretenders.

When I first saw this young lady, I had ample opportunities of seeing her in fits, which were always very severe, and of long duration; she foamed considerably at her mouth, and often severely bit her tongue; her face, limbs, and body, were frightfully contorted, and her head drawn backwards, technically termed opisthotonos, so as to form nearly a ring with the legs; the breathing was slightly stertorous, and the action of the heart irregular, and considerably quickened. When the paroxysm ceased, she became quiet and sullen, paying no attention to what was doing for her, and scarcely able to answer questions, in which state she generally continued until she had a sound sleep. These attacks came on about every week, nine or ten days, and sometimes she would have as many as four in the twenty-four hours; either one or more attacks left her always very sore and stiff, particularly about her back and lower extremities. I could not trace from her history that her fits came on periodically ever since she had become afflicted by them, an important character that I have occasionally observed, particularly in children

and young persons. I have observed this periodical return in rheumatic and hysterical cases; varying, however, in the length of interval between the attacks, from two or three days to months. I have no doubt that intermittent fevers, epilepsy, gout, rheumatism, and hysteria, and some forms of nervous affections, greatly approximate in their nature, and most certainly are successfully treated by preparations of bark, arsenic, iron, &c., when they bear an intermittent character. We know also that diseases of the urinary organs, from the application of bougies, produces occasionally the same effect, and are relieved by the same means.

In Miss M———'s case I had no difficulty in deciding upon the measures that promised most probable advantage, having ascertained that an angle had been formed in the dorsal spine, which, on tapping it, gave her acute pain. This affection had evidently been coming on even before her father's death, and most probably was the real cause of her health failing at that period, and possibly accelerated by that circumstance. I commenced my remedial means to the spine, and for the restoration of her general health, with little hopes of success, and continued them for eight months without the slightest apparent advantage, and not a little astonished that the mother's confidence had not failed her, the daughter having, or wishing to have, no voice in the matter. This impatience on the part of the immediate friends of patients for an impossibility in these cases, quick restoration of health, together with the general impression that epileptic cases are incurable, has often

greatly annoyed and even lessened my exertions in their behalf. No doubt the want of professional success in the treatment of epilepsy, was the original cause of this unfavourable state of the public mind, and now equally serves to keep it up; about the eighth month, happily the fits became milder, and the interval between each considerably increased, whilst her health and mind were rapidly improving; and in the twelfth month, from the time I commenced my attendance, we have all had the joyous gratification to date her last fit.

I continued, however, my attendance for several months after this time, with most interesting mutual feelings, on my part, of friendship, and on their's the same, with unbounded confidence and gratitude. I cannot help comparing my feelings during my success with those I experienced during the eight months I gained no encouraging change in my patient's condition, well knowing how little reason they had, from ample trial, to place confidence in any practitioner; consequently each of my procrastinated visits was paid with doubts and fears that my patient might attribute my perseverance more to avarice than to the gratification of being instrumental to her recovery. Three months after her recovery, her poor mother was taken ill and died in a fortnight, during which time my patient never left her mother's bed-side. This event naturally alarmed me for her welfare; it passed off, however, with no other effect upon her frame than is usual for an affectionate child to feel at the loss of an only remaining and tender parent. About two years after this, she

married a worthy partner, and has since lived in the country. Two months ago her unbounded confidence and gratitude induced her to come to town to place herself under my care during the interesting period of her approaching accouchement, which has passed off happily in the birth of a son.

The next case that came under my care is Mr. S., a German gentleman, who was induced to come to this country to place himself under my treatment, by the recommendation of a common friend of his and of the mother of the last-described case. Mr. S. was thirty-one years old when he first consulted me, and had been for the last ten years afflicted with epileptic fits. He became indisposed, he conceived, from excessive drinking, a habit that he has left off for the last seven or eight years. His fits came on once in seven, ten, or twenty days, and sometimes, formerly, at a longer interval; they were very severe and of long duration, with no very marked peculiarity during the paroxysm, of which he had not the slightest notice by any kind of sensation, a marked peculiarity in epilepsy; and I have not observed an instance to the contrary in my experience in these cases, or at any rate any useful notice for the patient to prepare himself for an easy fall, or to avoid a dangerous one; in short, the sensation, if any, has been simultaneous with the fit; and as for the aura epileptica, or a sensation of a blast of cold air ascending from the extremities to the heart and head, that we read of in books, I believe it is very rarely met with; and when it is, I should doubt whether it might not be

rather an impression from reading medical books, and hearing medical men always asking if the patient felt that sensation, as if it was a common symptom. In these chronic cases, patients become as learned in detailing symptoms, and particularly where the mind is a little affected, as ourselves; therefore, unless you can throw them off their usual habit of thinking, by skilfully cross questioning them, the less said the better. By the bye I will take this opportunity to notice another class of very deceptive patients, that may be appropriately designated good-natured patients, who answer every question in the affirmative; but whilst they put you upon very good terms with yourselves in apparently understanding exactly what they feel, they mislead you from their real condition, and possibly into a serious error in your therapeutics; when little mercy will be shown to you, for partly their own fault. However, to return to Mr. S.'s case, although there was no peculiarity during the paroxysm, he had afterwards severe acute pain in the occiput, and apparently in the base of the left lobe of the brain for about two or three hours, and found relief in backing himself, and pressing the back part of his head against a hard, resisting body. I have known a man who, whenever he got drunk, could only walk backwards until he fell, and there is also about town to be seen a little old man begging, with a stout lad generally on his left side, apparently pushing it to follow his right, which is ever the foremost, and supporting more or less his whole frame. This retreating action is not at all influenced

by his will, particularly when drunk, a state in which you may frequently see him, like most of his craft, about St. Giles's parish. I have seen his will baffled in attempting to get into a gin shop unaided by some thirsty votary of the temple, who are ever ready, for the sake of a sip, in the absence of his attendant, to effect his will and overcome his bodily resistance to quaff that which has already afflicted him so severely. This principle of backing in Mr. S.'s case and in the drunken men, will hereafter afford us an interesting and, I trust, a satisfactory explanation. When the pain in Mr. S.'s head ceased, he then would have it in the ring finger of his right hand, producing no redness, swelling, or scarcely any soreness, in short, a case of tic douloureux, similar to what I have been for a long time subject to in my left hand little finger, whenever my digestive organs become deranged. I considered these symptoms in the head and hand, as well as the fits in my patient, to be nervous irritation, in sympathy with the exceedingly deranged condition of his digestive organs, having detected no reason to suppose that the spinal chord was implicated. I therefore commenced my treatment by dieting him, and administering appropriate medicines, and keeping up a constant counter-irritation, that restored his health, cured his fits, and enabled him to leave me in thirteen months for his own country, where he has remained since, free from fits.

The next case that I shall describe is a very extraordinary one, both as regards the severity and lengthened period of the patient's affliction, and so favourably in-

fluenced by remedial means, thus far pursued, that I am led with considerable confidence to prognosticate the restoration of her health.

Miss Emma E———, aged nineteen, first consulted me on the 19th of October, 1834. This case is well known to medical gentlemen at Tottenham, also to most of the consulting men in London and in the neighbouring watering places, who at different times had attended her, myself being the twenty-second, amongst whom were the following eminent names:—the late Sir George Tuthill, Dr. Maton, and that honourable, liberal, and accomplished physician, Dr. Babington, who never gave offence, or lost a friend, and commanded the regard and confidence throughout every grade of his professional brethren, as well as of a large proportion of the public, and sincerely lamented by all.

The following is a brief history of her case that I received from her parents and friends up to the period she was placed under my care.—She has always been a sickly delicate child. At seven years old she had a severe bilious fever, that continued for about six weeks. At about twelve years old she had a sensation after breakfast as if she was going to fall. This sensation increased upon her in frequency, so that after a given time she would be attacked two or three times a day, and which became eventually changed into severe convulsive fits, that left the body very stiff for about two hours after each, and it was observed that they came on for some time daily at four o'clock in the afternoon; and about six o'clock she would laugh and joke as if nothing had been the matter. It has been particu-

larly observed that before and after the fits came on she was in a state of salivation, and the bowels have been always exceedingly distended by flatus, with a continual rumbling noise, and she was very frequently distressed by air rising in the œsophagus, and prevented by spasm from reaching the mouth, designated globus hystericus. About six years ago the left knee became stiff and painful, and the limb would occasionally shake most violently, which nothing tried, prevented, or lessened; and it was observed by her mother that whenever her attention was directed to it, the pain was worse. I could not ascertain whether she bent or straightened the knee to give her ease in any position during sleep or not. I have however little doubt of the case being so, from constantly observing hysterical persons of both sexes do so, even when a joint is swollen, painful, and stiff from that affection, which attacks all joints and the spine, particularly in young persons, perhaps as often as the more generally supposed and serious cause, inflammation. Ample and satisfactory cases I shall be able to bring under your notice, to prove this fact, as well as the serious consequences that arise from treating one for the other, and to establish the means of distinguishing them with facility and certainty, and of conducting successfully the treatment of every form of hysterical affection in both sexes, who are occasionally alike affected. The circumstance of my patient being exceedingly variable in her temper, having frequent difficulty or inability to void her urine, the tip of the nose being cold and pinched, a most common hysterical symptom, together with the flatulent

state of the bowels and globus hystericus, the changeable pains from one part to another, delusive impressions obstinately adhering for a given time, in opposition to ocular and auricular proofs, and the paroxysm occurring only in the daytime, agreeable to the habits of hysterical fits, and not whilst asleep, as common to epilepsy, well assure me that she may be considered up to this time more hysterical than epileptical; between the two complaints there is, however, a near relationship, if I may so express myself. By the advice of those who had attended her, she had been bled in the arm a great many times, and cupped in the nape of the neck, and down the back, until the whole is literally one uniform large scar. Four years ago she was attacked with inflammation of the brain, or what I should more readily believe to have been an hysterical affection of it, which I assure you is common, and requiring a much less active treatment, and very different from that proper for inflammation. Whatever this attack may have been, the fits from that time lost all their former regularity of accession, and became more frequent. Sometimes she would have as many as five, or even eight in twenty-four hours, and be confined afterwards invariably in a strait waistcoat for a week or ten days, being during these attacks exceedingly violent and noisy, with scarcely any interruption by sleep. Her mental delusions have become more fixed ever since, and she fancied every man that came to the house, was coming to marry her. On the 22nd of October I examined the spine in its whole length, by placing my finger upon each spinous

process, and with the other hand rapping it. There was evidently, on striking the upper part of the neck, a soreness experienced; afterwards she felt nothing, even over the slight curvature betwixt the shoulders, until the third process of the lumbar vertebræ was rapped, when she immediately shrieked, and said she felt queer all over, and after a little time I repeated the experiment, which made her sick, and a severe epileptic fit followed, the first I had seen her in. I am now (May) happy to say that the fits have for the last three months gradually subsided in number, on the days that they come on, with much greater intervals between the attacks; for instance, of two, three, and even above six weeks, with her mind and temper very greatly restored, and almost free from mental delusions. The raving madness that used to follow her fits for several days, has only recurred twice since I attended, once for eight or nine days, soon after I commenced my attendance, and since, for three days only, about four months ago.

I need not relate at present, in this general manner, several cases of St Vitus's dance, and of hysterical fits, with various other forms of the latter and other nervous affections, which I consider it to be hereafter my duty to do. For the present, suffice to say, that these and other nervous affections that had proved obstinate under the care of eminent practitioners, and even acute cases of rheumatism, and chronic inflammation of the heart, or lungs, have been successfully combated by my directing the remedial means to the primary derangement in the

spine, where none had been suspected, even when incipient curvature was established.

When we consider the important offices the vertebral column has to perform, first, in supporting the head, the thorax, and the abdominal viscera; and secondly, in containing the spinal brain or marrow, the communicating medium between the nerves of all parts of the body and the brain, we cannot be surprised at its power as the original or sustaining cause of various diseases, which practice has incontrovertibly proved; but I confess I am greatly so at the circumstance of practitioners rarely examining the spine in nervous derangements, and in affections of the organs of the chest and abdomen, as well as of the muscular system. It is not, however, my intention to imply that these affections always depend upon spinal disease, for I am too well aware that other numerous causes exist, frequently obscure and very remote from the effects; and I may say, more particularly amongst the higher classes of society, or equally indulged portion of it, in whom we most generally meet with nervous affections, which so embitter their lives, as to render their portion of worldly enjoyment nearly on a level with that of the poor and laborious. Nature having formed us for active life, it is necessary to our enjoyment of health, that our muscular powers should be habituated to a certain strength of impression.

Animal and vegetable nature may be aptly enough compared to each other in this respect; for a tree or plant brought up in a greater degree of shelter or shade

than what is suitable to its nature, will be puny and sickly; it will neither attain to its natural growth or strength of fibre, nor will it be able to bear the influence of the weather, or the natural vicissitudes of heat and cold to which it may be exposed.

With regard to indigestion, hypochondriac complaints, and low spirits, there is something in active duty, or hard labour of every kind, that tends to avert them, by the influence that such occupations have on the nerves, as to make them little liable to what may be called the diseases of excessive refinement. It has been observed by medical men in the navy, that sailors are seldom affected with hypochondriac complaints, low spirits, &c., except amongst landsmen who had been pressed into the service, and who had been bred to sedentary and indolent occupations.

Low spirits and hypochondriac complaints are more commonly met with in persons under thirty years old, than in after life, and more common in females than in males, owing partly to constitutional causes, and want of necessitous or compulsatory occupation, or being too anxious about unsuccessful employments; in either case the effect is unfavourable to health, inasmuch as morbid actions will develop themselves, according to the hereditary or accidental predisposition of the patient's constitution.

Toilsome, and even anxious occupations, do not appear, from my observation and reading, to be generally injurious to health, if they be successfully carried on, or the individual be buoyed up with confidence of suc-

cess. Historical records of the engagements of our army and navy amply bear me out in this statement, without entering into individual cases amongst merchants and professional men, that crowd upon my memory.

I do not, however, mean to infer, that great agitation of the mind will not sometimes destroy the health; yet I am convinced, from experience, that a similar cause does occasionally remove disease and restore health; and we know that the effect of external impressions in general is very different, when the mind is vacant, from what it is when occupied and interested by objects, whether of pleasure and satisfaction, or of danger and suffering. Hence it was a saying of some of the ancients, that acute diseases were sent from heaven, and that chronic diseases were of man's own creation. And thus we read in Homer, of fatal diseases being sent as punishments by the gods.

Recorded facts in the history of the late wars in Spain, and in the north of Europe, also during, and after the glorious and momentous battle of Waterloo, afford us innumerable proofs of the influence of the mind from active and arduous duties of war, in resisting, and even overcoming, diseases, as well as exhaustion, the usual attendant upon exertions, and want of food and sleep; circumstances apparently the most unfavourable, if this principle be not allowed. There can, however, be no doubt that the extraordinary fact can only be legitimately attributed to the influence of the mind over

the body; for instance, by the ardour with which men are inspired by the presence of an enemy to the hope and pride of victory. The plain and honest sailor, and the private soldier, are not less affected by this, than the more enlightened lover of his country. Even the invalids at the hospital demonstrate their joy upon hearing of a victory, by hoisting shreds of coloured cloth on their crutches. It would appear that there is something in situations of exertion and danger, which infuses a sort of preternatural vigour, particularly when the mind is interested and agitated by active and generous affections. Thus the body forgets its wants and feelings, and is capable of a degree of labour and exertion, which it could not undergo in cold blood, or disinterestedness.

The quantity of muscular action employed in fighting at a great gun for a few hours, is perhaps more than what is commonly employed in a week in the ordinary course of life, and though performed in the midst of heat and smoke, and generally with the want of food and drink, yet the powers of nature are not exhausted nor overstrained; and the future health of those who survive, unhurt by external violence, is so far from being injured, that it is sometimes improved by this violent, but salutary agitation.

Dr. Lind relates, on the authority of Mr. Ives, surgeon to Admiral Mathews, that when the fleet was off Toulon, in daily expectation for some time of engaging the combined fleet of France and Spain, there was a

general stop put to the progress of diseases, from the influence of that generous flow of spirits with which the prospect of battle inspires British seamen.

Sir Gilbert Blane also relates several similar instances, in his observations on the diseases incident to seamen, particularly in a battle fought against the French, in April 1782, off Martinique, which was the theatre for trying their strength, and deciding the sovereignty of the seas, which terminated in a glorious and complete victory, owing to the superior skill of the British seamen, the forces being equal. The sum total of the numbers of the British men on board of the thirty-six ships that composed the line of battle on the 12th of April, was 21,608, and the mortality, in proportion to this, during the month, exclusive of wounds, was one in 862. But there was less sickness, and less death from disease in this than any of the former twenty-three months, in which he kept records of the fleet, and less than in any subsequent month, till the fleet got to the coast of America. It must also be understood, that before an action on land or sea the men have but little rest. Sailors have incessant labour, necessary in the evolutions of the fleet, and being constantly at quarters, with the ships clear for action; for in that situation they have nothing to sleep upon but the bare decks, the hammocks and bedding being employed in barricading the ship, which is done by placing them in ranges on the gunwale, to cover the men from the enemy's grape and small shot; and soldiers are no better off, having to lie on the ground, often wet

and cold, with little food. The fact of this improved state of health is wholly to be attributed to the influence of the mind over the body, and not to the vulgar notion of stench arising from combustion of the gunpowder; for it has no such effect, no more than any other disagreeable odour has in preventing or curing obstinate complaints; although it has been the custom, and even with the concurrence of medical men, to recommend some of the most disagreeable effluvia for the cure of consumption, as those arising from cow houses, tan yards, or slaughter houses, or the calling of cat-gut manufacturers; hence, I believe, the origin of stirring tar and water under a consumptive patient's nose, and many other equally ridiculous means have been practised.

## LECTURE III.

I HAVE in the foregoing Lecture endeavoured to point out the important principle of the mind influencing the body, in order that you may be duly impressed, how necessary it is, whilst investigating the nature of a patient's disease, to consider well collateral circumstances; namely, his age and station in life, habits, occupation, temperament, and even the season at which he may consult you, before you decide upon a medical or moral plan of treatment.

I shall now take a general view of the principles of the body acting variously upon itself, producing irritation or inflammatory action in some of its organs. Irritation cannot be demonstrated, or inflammation of an active character in a nerve or some of the fine tissues of the body, if the attack be recent, for it leaves no trace to be depended upon after death; yet we know that when disorders attack the origin of nerves, or their attachment to the central mass, whether this be the brain or the spinal chord, they always disturb the functions of the organs to which such nerves are destined. It may be imagined that the ramification of nerves may be affected in their passage, and thus also give rise to similar phænomena; no reason can be alleged that such a circumstance may not happen, but

we know actually that the former does occur, and we may not neglect it in the treatment of diseases; and if by any means we could recognise the latter affections, they also would demand an equal attention. Notwithstanding irritation, common to health or disease, cannot be demonstrated, still it is rendered as palpable to our minds as organic disease may be demonstrated to our senses. Proper sympathies are only partially rendered perceptible to us, such as hunger, excretions, passions, and wants; but those of growth of the heart, lungs, and muscles of the chest, &c., of the brain, directly or indirectly, with the whole system, are not. We must, however, first endeavour to explain the distinction between the terms nervous energy, morbid irritation, and sympathy, in order that we may trace some characteristic line between inflammation and simple nervous irritation, the latter affection being by far the most common of the two, and quite equal in degree of importance, as regards the patient's welfare. Nervous energy is the product of the nervous system, and coexisting with life, by which all parts of the animal frame are intimately connected, and rendered susceptible to irritation and action in its infinite variety, natural and preternatural. Thus the animal economy, comprehending the functions of every organ in the body, is performed, and each organ is made to sympathize with the whole.

Nervous energy is exhaustible, and capable of irregular distribution, *i. e.* not uniformly alike in every organ of the body, agreeably to its laws, in a state of

health. Nervous energy endues every organ to the performance of its functions ; for instance, the stomach to convert inanimate matter, food, to a state fitted for its own restoration and continuance, as well as that of every particle of the animal body ; again, for the same purpose of invigorating the whole frame, all parts consent to rest in sleep to increase the nervous energy, or to equalise it by increasing it where it has been unduly exhausted, and to lessen it where it has been increased or concentrated, for the harmonious action of the whole organs of the body, agreeably to their habits in health.

Nervous energy is diminished by all actions which result from life, either natural or preternatural, including all manner of sensations in the animal economy and the functions of every organ and tissue, that enters into the composition of the animal body. Since all action of health or disease requires first a disposition in the nerves, before it can take place ; it must, therefore, be evident that this system forms one of the most important subjects for our consideration, in all the minutiæ connected with it.

The nervous energy concentrates itself in any part whose nerves are irritated from any cause. Thus disease is established in those parts so irritated, or in others, for want of their accustomed supply. The simple stimulus of heat, retained by undue clothing, is a source of much greater evil than is generally suspected ; it stimulates the nerves of the skin, and thereby solicits the nervous energy from the interior organs to the

surface; consequently, some thoracic organ may fail in performing its healthy function, as the heart and lungs, or the bronchial glands, or some pelvic organ, as the uterus, &c., or more probably some abdominal organ, as the stomach, large or small intestines, or others. More than twenty years ago, this principle was suggested to me in my own person, as I will relate. I grew very fast, tall, and thin, and was considered by my friends to be rather delicate, having, however, no particular complaint. In consequence of a severe cold, that proved obstinate, my mother requested that I would wear a flannel waistcoat, and drawers, which also were strongly recommended by my family medical adviser, to whom I was then a pupil; whether wearing it tended to the removal of the cold I do not know, but certainly I was afterwards more susceptible to cold, so that I had continually, more or less, a cough, that greatly distressed me. This circumstance, together with my thick flannel dress, caused me to perspire copiously, whenever I exerted myself, however slightly. From this time my stomach and bowels became much impaired in their functions, and I was soon afterwards considered, by every grade of professional men, to be consumptive—took medicine, and tried a change of air, &c., without any advantage. I was at last, from circumstances, brought to reflect upon my case; unwilling to die, merely, as far as I could judge from my feelings, to confirm the opinions of my medical attendants.

I therefore conceived that the heat of my flannel

dress promoted greatly the perspiration, and thereby my debility, and consequently, my irritability; and that the nervous energy, being constantly concentrated upon the surface of my body, became necessarily deficient in the stomach and bowels; thus my food was imperfectly digested, and my debility augmented, as well as my general irritability, and particularly that of my bronchial glands, increasing the cough and expectoration. My bowels became, from the same cause, constipated, causing pain in the head, or in my side, for which I had, as usual, been repeatedly bled in the arm, leeched, blistered, purged, and starved. Notwithstanding my great debility, thanks to the elasticity of my constitution, the doctors left me, in spite of all they did, alive. I removed my flannel dress, and hare skins, dressed lightly, avoided all vegetables and slop diet, as tea, coffee, broths, jellies, gruel, in short, all kinds of food, except plain meat, bread, and wine. Thus I soon lost my susceptibility to take cold; my cough subsided, as did the pain in my head, side, and joints; and my appetite and strength were completely restored.

I am very frequently consulted by patients similarly affected, and who have been treated as I was, and I am happy to say they are generally equally benefitted by those principles that I adopted in my own case; undue heat of the skin, kept up by flannel and other clothing, is a cause of debility, and thereby of various disorders, particularly of cough, hysterical affection, and indigestion, by irritating the skin, and thereby concentrating the nervous energy upon the surface, at the expense of

the interior organs, some of which become imperfect in their functions; and thus morbid irritation, and possibly eventually organic disease, is established in character, according to the predisposition of the constitution, or of the local organ affected. I conceive my success in very obstinate cases of indigestion to have been greatly promoted by my directing the removal of flannel, and other undue external causes of warmth. I never had occasion to regret this advice, although the patient might have worn flannel for more than fifty years. My remedies have always been simple, and suggested by those never-failing indicators of the state of the digestive organs, the tongue, skin, and pulse; the diet that I recommend in these, or even in inflammatory cases, is the same that I adopted in my own case, meat, bread, and wine; and I feel assured it is judicious to allow patients to indulge moderately in any food that they particularly desire, for I have found that the quantity they take does them good, and is invariably better digested than that which a medical man might recommend, from his conception of its being easier of digestion. I conceive, with our knowledge of the secrets of digestion, and the peculiarity of every adult person's appetite, we have no right to dictate, but humbly submit to the voice of nature within the limits of her usual habits. Restriction is necessary to be observed by an invalid, and I believe that generally plain meat, or fish, is preferable to rich soups and jellies of all kinds, particularly to persons who have generally lived well; you should, however, be principally

guided by the patient's predilection ; for we find that fish disagrees with one, meat with another, vegetables, of a particular kind, with another, and so on ; and were patients in health to pay more attention to what agrees, and reject that which disagrees with them, there would be much less occasion for medical services than we find is the case. Simple fluids are decidedly objectionable, because the stomach requires to be stimulated by something more generous than tea, toast and water, gruel, and the like, which also dilute the gastric juice, unfavourably to the digestion of more nutritious and substantial food.

Possibly, the particular and restricted regimen which is generally prescribed to invalids is not, after all, of so much importance as we are in the habit of attaching to it, because we cannot understand in all cases the infinite diversity that exists in the digestive powers, as well as in the palates of different individuals, both as to the quantity and quality of their food, and the variation that results from circumstances at different periods ; at any rate these circumstances require, for their judicious management, more knowledge than is generally possessed, and certainly it must be admitted that the restrictions necessary to the recovery of health are seldom favourable to its preservation ; indeed I am well assured they are often continued far beyond the time that science would dictate, as conducive to the advantage of the patient, and the reputation of the medical attendant, not denying, however, that a contrary error is occasionally committed. More consummate know-

ledge is often required to decide between these two points than in conducting the medical treatment; and upon the whole I think the profession in the present day err far more by starving, than the patients do by stuffing. In this age of enervating refinement, the public (too often, I believe gratuitously) attaches great importance to the opinions of professional men, particularly some of the most eminent, as to the quality and quantity of food they should generally eat; just as if a rational man's experience did not inform him, with as much accuracy as his moral sense distinguishes right and wrong, what articles of diet to select, and what to avoid, much earlier and better than any professional man can do, and his stomach will inform him when it is indisposed for food, when it has received enough, and when it is overloaded. These circumstances should alone be his legitimate source of information, whereby he cannot ignorantly mislead himself.

I conceive it is a moral impossibility to scheme a general system of diet in health, or in any diseased state, appropriate to all men; because a man is the creature of circumstances; therefore neither his physical nor his mental appetites and powers approach to a state of uniformity, but are in the highest degree variable. Probably all that is known upon this subject may, as a general rule, be thus understood, "They "that are whole, need not a physician," and may eat and drink what they please; and they that are ill, what they can. Longevity, that is generally so much desired, and about which so much has been written, and I may

add, from its worthlessness, neglected, is not insured to the observer of rigid temperance, the early riser, or the medicine taker; nor is it prevented, in many instances, by habits of an opposite character, if we may judge by history, and by living examples, of aged persons, who have lived, as the phrase is, all the days of their lives, totally independent of all slavish rules and formularies of our modern gastronomists.

Morbid irritation, in its simple form, is the consequence of some one or more organs being weaker than the rest; consequently, they are more susceptible to impressions, and action follows in a greater degree than is usual or natural to them, and beyond their power to continue. It is therefore injurious to the whole or part of the system.

The following instances exemplify the fact. The bowels, when irritable, are continually relaxed. The stomach, in the same state, is nauseated by ordinary food; an irritable skin is blistered by what acts on another's skin as a mere rubefacient. Irritable fauces are rendered sore by the mere change of the wind. An irritable bladder is continually parting with its contents, before the mere stimulus of distention can act. An irritable heart is easily made to quicken its action, by slight exertion, or by excitement of the mind. The mind is also sometimes easily over-excited in reference to the occasion, with the emotion of anger, fear, pity, or joy. An excess or deficiency of the natural stimuli will reduce healthy organs into a state of morbid irritation, varying endlessly in degree, between the extreme points

of elevation and depression, independent of disorganisation. This irritability of an organ or organs may be only occasional at the beginning; but by frequent repetition it may become habitual. In either form, and particularly in the latter, it may be expected more or less seriously to interrupt the harmonious connexion of the functions of the different organs of the system which exists in a state of health; therefore its subordination is as necessary as its presence. But we have, in addition to local irritable organs, a very important principle to consider, inasmuch as it affects them indirectly, that is, an irritable temperament, which is an inherent and general state of the system of some persons characterised by an unusual sensibility and disposition of the nerves to produce undue action; hence the activity of the vascular system, and the greater susceptibility in voluntary and involuntary parts to be influenced by the state of the mind into action, which the will cannot control; for instance, an irritable state of the bowels will cause them to be suddenly and violently acted upon by a fit of passion; an irritable state of the heart will cause it to palpitate, or its pulsation to intermit, from slight causes; even a particle of food not digesting in the usual time will have this effect, as will an excited or a watchful state of the mind, as well as various other causes. An irritable temperament greatly predisposes the system under the influence of local injury or disease to a very disproportionate derangement of the general health, in reference to the occasion, and more particularly to symptomatic fever; we daily see great

difference in the effect of partial disease or local injury upon the constitution of different persons, and also in the degree of pain. I will mention two cases, to illustrate the fact. Two brothers, aged nine and ten, enjoying their usual good health, burnt their fore finger and thumb, apparently to the same extent, at snap dragon. I applied flour dressings to both; the youngest boy soon renewed his gambols, free from pain and constitutional disturbance, whilst the eldest was suffering severe pain in his hand, which induced him to remove the flour dressing, and plunge his hand into cold water. During the night he became restless, and his spirits ruffled; in the morning his pulse was full, his tongue white, with loss of appetite, his bowels costive, his skin hot and dry; in short, a sharp symptomatic fever came on, and he became delirious in the following night. These two cases point out to us the difference of degree of pain and constitutional suffering, that a similar accident will produce in different constitutions. The same difference is daily observed in practice in cases of indigestion, whitlow, carbuncle, enlarged absorbent gland, boil, and teething, during which one child may suffer pain, fever, and a fit of convulsion, in which he may die, whilst another suffers no inconvenience. The same differences are observed in important derangements, arising from constitutional disease or local injury. Thus, then, we may account for the various effects upon different individuals, or upon the same individual at different periods, produced by the application of leeches, issues, setons, blisters, hot and cold baths, drastic purgatives,

a low or full diet, or a sudden change of temperature, of physical or moral habits.

I shall now make a few observations upon sympathy. This is a very important principle of the animal body, depending upon its life. The most simple definition of sympathy is, that when one living part sympathizes with another, there is action of a part without immediate impression upon it; arising from the impression on a remote part.

Diseases constantly develop to us the laws of sympathy. The fact is illustrated in a case of diseased hip joint. The patient will have at the commencement, pain only in the knee joint of the affected limb, which occasionally misleads a careless practitioner's attention from the diseased hip joint, to which alone his attention and remedies should have been applied, particularly as at this early stage alone the disease is controllable by medical science. Sympathy is a symptom of disease, and frequently the only notice the patient or the practitioner has of the disease. Pain in the lower angle of the shoulder blade is a symptom of a diseased liver. Itching of the nose is a symptom of worms in the intestines. Pain in the loins is a symptom of hæmorrhoids, or of rheumatism, or of impaction of the large intestines, or of diseased vertebræ. Again, an irritable bladder may depend upon either of these causes. Pain in the right or left side, confined to a space about the size of a penny piece, met with generally in young persons, particularly females, is a symptom of hysteria, or imperfect secretions, or indigestion, and frequently treated

for inflammation by depletion, which only at best temporarily relieves the patients, whilst it renders them more susceptible to future attacks, and often eventually to consumption, or some other dire complaint, to which the system may be most predisposed. General debility, brought on by bleedings and other means of depletion, is productive, in growing and delicate persons, of a most serious train of evils, which I have but too often painfully witnessed. The practice renders the system unhealthy and irritable, or over-ready to action, beyond its power to continue, consequently a general debility ensues, or a condensation of nervous energy takes place, and fixes itself upon some weaker organ than another, thus frequently establishing a fatal complaint. These consequences have long since compelled me to regard in general the effect of phlebotomy as more dangerous than advantageous to the patient. I can safely say, from experience of nearly twenty years, that it is an operation but very seldom required, even in inflammatory cases, which, however, are in my opinion much more rarely met with in practice than is generally supposed. I feel assured, that when any part is in an inflammatory state, that this may be combated and subdued by other medical means as efficiently, if not even more so, and often with infinitely more safety, than by general bleeding, severe purgation, and continued starvation; a practice pregnant with dangerous consequences, particularly in those common cases of concentration of nervous irritation, with or without excited vascular action, such as the aforesaid cases of pain in the side of

young people. Such functional derangements are continually mistaken for organic disease, as my consultation practice but too fully confirms. I shall hereafter, by experiments, convince you, that a tuff buffy coat, which is usually received as a satisfactory proof of inflammatory action going on in some part of the body, is abstractedly not worthy of being regarded more so than of great debility, since it can be proved that by severely bleeding a healthy animal, or starving it, a thick tuff buffy coat is invariably produced.

I have laboured in my public practice for nearly fifteen years, and in my courses of lectures for eight years, to prevent that mistaken care which is commonly called starving a disease, and to set aside the dreadful apprehension that a little nourishment given to a person in a fever is still adding fuel to the fire. Under the vague idea of inflammation, and inflammatory diseases, even bread and water have been sometimes accounted too great a support, or a treat, for a patient; thus the ablest assistance is oftentimes baffled, to the cost of the patient, and not unlikely to the disgrace of a worthy practitioner. Be assured that it is more eligible, even in these reforming days, to endeavour to support and build up again a shaken, diseased, and tottering frame, than to pull it down; never let this be done but by the express command of wisdom and experience; for it is a serious affair at all times to deprive a tenement of its foundation and strength. I cannot pass over this opportunity of noticing how much evil is occasionally done by bleeding females during gestation,

for no other reason than that circumstance, and that their mothers were so treated; the general excuse that their parents did well, so treated, is not a sufficient reason for the continuance of such a practice; the evil does not immediately follow the cause; no doubt the serious consequences would more commonly follow immediately, or remotely, were it not as, I believe, an universal law of nature to implant a greater tenacity of life during the progress of God's first command, increase, than at any other time; hence we see that females will proceed to the full period of gestation, and give birth to a child, whilst afflicted with a fatal complaint, as cancer, consumption, &c. without greater liability to untoward consequences than is common; but soon afterwards the apparently dormant disease will revive, and make frightful ravages in a month or two, to the destruction of life.

The same principle I have observed in plants about to flower, when they will bear transplantation, and struggle with unfavourable circumstances much longer than at any other time, to break forth in flower, afterwards they soon wither and die. The present almost invariable custom of keeping mothers after their accouchement very warm, in a close room, and upon caudle diet, is pregnant with serious consequences, inasmuch as the sudden transition from perhaps a tolerably active life, and good living, to a diametrically opposite plan, causes irritability, and, possibly, a fever, which may affect some one part more than another. These symptoms are attributed to labour, instead of the

system pursued, whence, ever apprehensive of inflammatory action, depletory measures are more rigorously observed, and heaven knows what may follow; however, all might have been avoided, by observing more nearly the mother's natural habits of diet, and allowing her to take that food which her feelings indicated, before restriction destroys her appetite. I never knew an instance where food and wine, in moderation, when requested, proved injurious to the mother, nay it has always proved an exhilarator, as the phrase is, to her rapid getting up.

In respect to administering castor oil to new-born infants, to remove the meconium, which the mother's first milk will do so much better, it is indeed a most unnatural practice, therefore unnecessary and injurious. I trust you will never stoop to conform with such custom. When the mother's milk is not to be had, a little brown sugar, or treacle, will answer every desired purpose.

Starving diet, and other means of depletion, in cases of inflammation of external parts of the body, where most probably it will terminate in an abcsess, is frequently a cause of greater evil than such an event can possibly be in such parts. The depletory means tend greatly more to the increase of ulceration and matter, by the consequent debility, irritability, and fever which supervene, than to prevent that termination. Inflammatory action in glands, and cellular substance, has a great tendency to terminate in suppuration, and more particularly in certain habits of body, and, after

illness, all means generally fail to prevent it. In all cases where matter has formed, the system should be well supported by a generous diet, which will have the double advantage of lessening the ulceration, and of confining the matter to as small a space as possible, by establishing an adhesive inflammation around it We should always endeavour to prevent it from extending, and thereby taxing the more the constitution in the after process of restoration, which invariably irritates the system, and greatly so when it has already been debilitated, either by the disease, or the means used to subdue it.

I have often been called into consultation in cases of abscess, where great prostration of strength was brought on; as for instance, in the breast, after confinement, where serious debility supervened after the antecedent practice of depletion, which, in some cases, endangered even the life of the patient, and in all, greatly prolonged their sufferings. In such cases, nothing can save the patient but a generous course of diet, with as much wine or spirits as the system can bear, without exciting undue vascular action. I can assure you, that under such circumstances, patients will bear harmlessly, nay advantageously, what would at any other time be sufficient to intoxicate them. Another very common error in practice is, dressing the ulcer once or twice a day; the true secret in healing all ulcers, by external means, consists principally in avoiding exposing them to the common air, and therefore dressing

them as seldom as is compatible with the patient's comfort.

Ulcers of various parts are brought on by indigestion, and kept up by the same cause, in an irritable state, resisting every measure used for their alleviation or cure, save that of attending to the digestive organs, and more particularly to the action of the large intestines.

The cause of varicose veins, and ulcers of the lower extremities, I have ascertained to be most generally the formation of scybala in the cells of the colon, which cause must be removed before the patient can be cured. Indeed I am satisfied, that when the intestinal tube fails in performing its healthy functions, the failing portion is generally the colon.

I shall hereafter direct your attention to many cases of indigestion, with some forms of its various accompanying evils, as pains in the head, loins, or joints, palpitation of the heart, with intermittent pulse, difficulty of breathing, irritable glands in the neck or groin, or even ulceration of them, or a similar state of the skin, swollen and painful ankles, flying rheumatic pains, general debility, and severe uterine and bladder affections, readily giving way to the removal of the cause, scybala, by appropriate measures. In some of such cases that I superintended, the cause of the symptoms had evaded the perception of some of the most eminent practitioners of the day, and, of course, the means of cure; consequently, I shall be particular in directing

your attention to these cases, and to the means of removal.

In the treatment of all medical and surgical cases, I am fully convinced more harm is done by too great, than by too little activity. To be a successful practitioner, your means should be simple, and guided by the circumstances of the case, ever taking care that the strength and action of diseased parts should be kept well proportioned. The effects of electricity, hot baths, &c., are frequently too stimulating, and increase the action beyond the power of the system to endure. The cold bath tends to diminish actions, whilst a hot bath increases them. It is in many cases of the utmost consequence, that you do not increase action beyond the power of the body to sustain. I will relate the following case, in which I was called into consultation, to exemplify the consequences.

A young lady, about sixteen years old, had a fever of the putrid kind, with ulcers in her throat. Bark had been given her as usual, without good effect; blisters had been applied, and their application was continued long after the period when they could be of any possible service, and they had been dressed with stimulating ointment. On the day before I saw her, she had been put into a warm bath, and after she was taken out, she fainted, and was much debilitated. I perceived that the blistered part was sloughing, in consequence of the irritating ointment causing the death of the cellular substance, by the actions being excited beyond the vital powers of the part to support. The

sloughing process always greatly irritates and disturbs the constitution, and you should invariably consider this to be the consequence of the sloughing process, and not the sloughing a consequence of the fever, and other constitutional disturbances.

The physician who attended the patient, wished the stimulating ointment to be continued, to favour the separation of the slough, and the warm bath, to lessen the constitutional irritability. I objected to both, and pursued a soothing plan of treatment, with success. My reasons were, that the actions produced by the bath, and the stimulating dressing, would continue, as they had proved to be, more than the vital powers could support. A striking example of the consequences of the powers and actions not being well proportioned, is seen in the following fact. If an animal, nearly starved to death by being long in the cold, is removed suddenly into a very warm room, it will soon expire, in consequence of action being excited greater than the strength of the animal can support; but if the animal is put into a cold cellar, it will recover, or live for some time. A familiar instance of the same effect, is the pain experienced in the fingers and toes, when very cold, and held to the fire.

I have often observed that nervous pains are brought on by slight attacks of indigestion, by colds, and by a certain state of the mind, as that of distressed emotion, and often removed or relieved by the opposite state; both occur however, in nervous persons being easily excited, and over-excited, in reference to the occasion.

The connexion of local disease, or an irritant, with general disorder by sympathy, through the medium of the nerves, is constantly observed. A decayed tooth may produce a nettle rash all over the body, with fever, loss of appetite, and spirits; or it may produce an abscess in the face, or local pains in the head, or in some other part; here the diseased tooth excites action in the skin, which constitutes sympathy; and that may again become a source of sympathy by exciting a morbid action in the stomach. Pressure upon the nerves of the spinal chord, from incurvation of the spinal column, will cause very remote parts to sympathise. The arms and legs may become very painful, or paralytic, or the bowels may become painfully distended by wind, and obstinately constipated. It is accompanied occasionally with paralysis of the inferior spincter muscles of the body; or the patient may be severely afflicted with asthma. Effects are constantly observed to be produced by remote causes; as a worm crawling in the stomach has been known to produce temporary blindness, and convulsions. Here again the brain sympathises with the stomach, producing blindness and convulsions. Now, were you to examine the head in a case of death from this cause, you might find a congested state of the blood vessels of the brain, and so you would from the following different causes of death:—a continued fever, that greatly reduced the patient's strength; local inflammation in any other part of the body, where excessive bleeding was practised, with a view to overcome it; accidental starvation, or employed in combina-

tion, or not, with bleeding and purging, to overcome a case of fever, or local inflammation; delirium arising as a consequence of amputation for a recent injury, or from burns; or absorption of morbific matter, and various other instances might be adduced; but these will suffice to prove that vascular fulness may be only the consequence of nervous irritation, similar, in my opinion, to a redness of the skin produced by rubbing it, or from the application of heat; both of which act as irritants to the nerves, and invariably cause a fulness of the blood vessels, and consequent redness, so immediately after their application, that it is impossible to conceive that inflammatory action can be simultaneous with the cause to account for the effect. All parts of the frame are susceptible to irritation, but differ in degree and mode of action, according to their anatomical structure; for instance, the same degree of irritation applied to the serous tissue covering the outside of the intestines, and to its inside, the mucous tissue, will produce very different effects in kind as well as in degree; in the serous tissue little pain or inconvenience may result, or possibly a deposition of lymph upon its surface, and not in its substance, will occur, and thereby thicken it, or cause it to adhere to the adjoining surface, which, I believe, is not attended with any inconvenience to the patient, for it is found more or less in every subject, young or old.

When the inside lining, the mucous membrane, is irritated, a copious secretion of mucus, and perhaps afterwards of pus, takes place, frequently accompanied by

prostration of strength. Thus we have in a thin coat, like the intestine, from its anatomical structure, a different degree of susceptibility to irritation, and a different mode of action, within the tube, a suppurative process; and without, an adhesive process. It must however be recollected, that a long continued low degree of irritation in the serous tissue will also cause a secretion of serum, as occurs in cases of dropsy; or it may be the consequence of the cause of the irritation, and not of the latter effect.

The organs of the thorax and abdomen have often their sensibility but little increased in acute or chronic inflammation of them; hence it is not an uncommon circumstance for persons to die of disease seated in these parts, without ever having experienced any material pain. But when the inflammatory action is going on in their covering the serous membrane upon their surface, considerable pain is experienced, accompanied by constitutional disturbance, and increased vascular action. The same difference also occasionally occurs in the brain.

The application of dust or smoke to a mucous tissue, for instance, the external covering of the eye, the conjunctiva, will cause an immediate fulness of the blood vessels, and consequent redness of it. The lacrymal gland sympathises with it, and a copious flow of tears follows, supposed to be for the purpose of washing off the offending matter, which is admitting the effect to be a remedy for the cause, a more plausible than correct inference, inasmuch as secretion quickly follows irri-

tation in all membranes exposed to the air, as the conjunctiva, the intestinal and bronchial linings, as well as all others so exposed, being necessarily mucous tissues. It serves important purposes, for during inflammatory action it prevents adhesions of the inlets and outlets of the body, which necessarily would cause the death of the animal; whilst on the other hand, the same degree of irritation from a cause applied to a serous tissue, lining any organ not exposed to the air, would not comparatively produce so much inconvenience, being less susceptible to irritation from slight causes than mucous tissues are. Chronic inflammation of a serous tissue produces a watery secretion called serum, whilst a more active degree will cause a deposition of lymph and adhesion of the different surfaces of this investing membrane, and the third degree pus, and the fourth mortification, as usual in all other parts, under similar circumstances. Vascular congestion, observed in the brain or in any other part of the system after death, is not in itself sufficient to justify the usual opinion that such an effect is the consequence of inflammation; even redness and vascular congestion only prove that the brain is affected, and thereby its nervous energy is disturbed and impaired. Practice confirms the correctness of the theory, for we know that bloodletting does not cure disorders in which there is, or is supposed to be, fulness of the vessels of the head. Although it occasionally gives temporary relief, in the majority of cases it fails, and even aggravates their violence, and increases the susceptibility of the system to renewed attacks.

In concentration of nervous energy, from want of its natural distribution over the system, most remarkably different effects are produced, influenced by the causes and the character of the part affected; the latter circumstance renders frequently the sympathetic more violent than the original disorder, as in teething of children, which often produces either temporary blindness, or paralysis of the right or left arm, or convulsions.

To distinguish between these two conditions of nervous irritation, with consequent derangement of the function of an organ, and inflammatory action going on in it, is a desideratum in pathology. Modern writers on pathological anatomy have prosecuted, with considerable zeal and ability, their researches into the nature of demonstrable diseases of organs, but they have done but little towards elucidating the true relation which subsists between actual inflammation, with the various forms of organic derangement consequent upon it, and simple morbid irritation, with functional derangement; for, by limiting their views to the disease which the post-mortem examination exhibited, they have overlooked those antecedent morbid states of excitement arising from an undue determination of nervous energy, or what may be considered a concentration of it, which greatly resemble, and are often mistaken and treated for inflammatory action, before they actually pass into that state, and which I believe happens more or less at the expense of the whole system; inasmuch as when one or more organs are unduly excited, the others are pro-

portionally less active, having their usual supply of nervous energy consumed by the irritable organs.

Debility is the cause of irritability, and irritability is the cause of irregular or undue action of an organ beyond its power of continuance; this undue action of some organs will occasionally increase their power, instanced in an irritable heart, or bladder, their walls becoming considerably thickened, independent of inflammatory action, as the muscles of a limb become larger by labour. This increase of power is not favourable to health, because the cause and effect tend to the destruction of the organ, or of the individual, which it generally effects eventually if not removed. A concentration of nervous energy is observed to take place in a greater or less degree in any part according to its susceptibility, and the appropriateness of the cause, which may be elucidated by the narration of the following instances:—If you apply a blister in the neighbourhood of a freely discharging issue, you will find that its discharge will cease, and the issue become comparatively dry, during the active effect of the blister, and when this irritation becomes less than that arising from the pea in the issue, then the latter will regain its former humidity, and the blister heals. It is here evident that the nervous energy is concentrated, more or less, in the issue, and that it reverts to the part to which the blister is applied, during the time that this is of the two the greatest irritant; and when it ceases to be so, the nervous energy returns to the issue; hence the practice of applying

counter irritants, as blisters, issues, &c., in the neighbourhood of an inflamed or irritable part, where the nervous energy is too much determined or concentrated.

I think it very probable that the irritation arising from recent injuries, or disease, in whatever degree the nervous energy may be concentrated, is at the expense of the whole that is in the body, and that the excess is not formed in the immediate part that may be diseased or injured, where it is in too great a degree concentrated. The truth of this principle is considerably, if not completely, confirmed, by the uniform torpidity of all secreting organs, after the body has received a severe injury, as compound fracture; after which the patient has constipated bowels, hot dry skin, clammy mouth, the urine scantily secreted, and high coloured, with other symptoms of fever, arising simply from the deranged functions of different organs, for want of their natural or usual supply of nervous energy.

But in long-continued cases of diseased bone, ulceration of the soft parts, hæmorrhoids, stone in the bladder, &c., after a given time, the nervous energy becomes as it were, by its elasticity, adequate to excite the natural functions of the secreting organs in general, without any abstraction or remission of pain in the affected part, where it is unduly concentrated. Thus the nervous energy in the affected part may, after a certain period, be considered an excess above the inherent or natural portion of the system. This excess of nervous energy often either destroys the patient, or

produces another complaint, after the cure or removal of the affected part, by fixing itself upon some weak organ, which is thereby the most predisposed to fall into a state of disease ; and that disease will be in accordance with the predisposition of the constitution, or of the organ itself.

It is generally observed that gouty persons are very free from other complaints, and enjoy better health after an attack, than before ; the nervous energy must be more or less concentrated in an acute attack, and gradually exhausting itself, leave the system debilitated, and possibly with a diminished quantity of it ; but it is distributed after the rule usual in a state of health, consequently, the patient is free from those flying pains, or general indisposition, commonly experienced, and occasioned by its irregular distribution, before its concentration upon a local part in the form of an acute attack. It is extraordinary to observe the high degree of nervous excitement that attends sympathetic inflammatory fever, and other forms of acute fevers, in which the patient is kept a long time awake, continually speaking short sentences with rapidity, and making often violent exertions in attempting to rise, requiring the united strength of two or three persons, without the straight jacket, which is always a much more judicious and effectual means to secure his safety. The patient, under these circumstances, will have quick pulse, flushed face, dry tongue, with diminished secretions of all kinds. Supposing this fever to depend upon a local injury, as compound fracture, all these

symptoms will subside about the fourth day, when the suppurative process commences in the wound, then the patient will feel only his real strength, unaided by diseased excitement of the nervous system; in which state he will scarcely be able to raise his hand, although, perhaps, four or six hours only after his escape from his bed, in opposition to two or three men.

In this excited stage of fever, arising from local injury, it is of the utmost importance that you should ever recollect the natural period of its termination, and avoid severe bleedings and purgatives, which it is more than probable, may cause the patient to sink afterwards for want of power to carry on the suppurative and restorative processes. It is extraordinary that this fever, or at any rate, one apparently similar in its symptoms, attending some forms of madness, will continue for a long period before it subsides, or destroys the patient. In this case, the fever shows itself different in its effect upon the constitution, and, no doubt, requires a different treatment; for in the symptomatic inflammatory fever, the excitement, or the life of the patient, must give way in from four to six days, or soon afterwards.

When the nervous energy is unduly determined to any organ, from a recent cause, the other organs are less susceptible to irritation; thus I am convinced we may satisfactorily explain why the bowels are not so readily as usual acted upon by aperient medicines, when some active disease is going on in another part of the system.

Diseases of children have constantly exemplified to

me this fact, in cases of dentition, terminating in convulsive fits; after which, children often remain in a comatose state, and blind for several days. In such a case, my experience fully justifies me in assuring you that aperient medicines of all kinds generally do harm, and never are of service until the head is relieved of pressure of blood, from nervous irritation in sympathy with the inflamed gum over the tooth, by free abstraction of blood from the nape of the neck, by cupping, and crucial incisions, through the inflamed gum down to the protruding tooth. The relief that these operations will afford to the patient, will also ensure a full and copious effect from the aperient medicines, and thereby their beneficial influence, instead of those deceptive dejections, without bleeding, supposed to be caused by the administered purgatives, but which I believe is never the case, and that the dejections never, or but very seldom, contain the aperient medicine, therefore it is allowed to remain in the intestines, probably increasing the sufferings of the patient. I believe that nervous irritation of the brain, in sympathy with dentition, seldom requires general bleeding from the arm of infants; and that abstraction of blood by leeches is not to be recommended, because it is a tedious mode, and the quantity of blood cannot be regulated to a certainty, as it may by cupping—a circumstance of importance in the case of a delicate infant, that has long since exclusively induced me to give the preference to that mode of abstracting blood.

We must, however, understand, that the nervous

energy is not necessarily concentrated to one or two organs, when disturbed into a state of irregular distribution over the system. Slight causes in some habits will produce varied effects, as indigestion, deficient or undue secretions—a prolific source of endless consequences, which occasionally terminate in very serious diseases. Heat and cold greatly influence the nervous system. Whether heat be hereafter decided to be a simple matter, or only a property of matter, it forms one of the first principles of action in nature, and destroys attraction of all kinds; hence it is the basis of fluidity. A quantity of heat may be estimated by some of its effects; first, by our sensations; secondly, by the expansion of bodies in general; and this is called the first division, sensible heat; the second, is absolute heat; because the heat which exists in some bodies cannot be made sensible. Sensible heat of the atmosphere, or that generated by the body, and retained by undue quantity of day and night clothing, particularly influences the distribution of the nervous energy, and thereby, more or less, the functions of all the organs of the body.

Thus persons who enjoy good health during the cold and temperate seasons, become indisposed during the warm weather. Their symptoms vary, but generally they are those common to indigestion; the most characteristic signs of which, from whatever cause, are disagreeable dreams, such as of falling down a height, or being pursued by enraged and dangerous animals; or some of the following symptoms, unrefreshing sleep,

produces another complaint, after the cure or removal of the affected part, by fixing itself upon some weak organ, which is thereby the most predisposed to fall into a state of disease; and that disease will be in accordance with the predisposition of the constitution, or of the organ itself.

It is generally observed that gouty persons are very free from other complaints, and enjoy better health after an attack, than before; the nervous energy must be more or less concentrated in an acute attack, and gradually exhausting itself, leave the system debilitated, and possibly with a diminished quantity of it; but it is distributed after the rule usual in a state of health, consequently, the patient is free from those flying pains, or general indisposition, commonly experienced, and occasioned by its irregular distribution, before its concentration upon a local part in the form of an acute attack. It is extraordinary to observe the high degree of nervous excitement that attends sympathetic inflammatory fever, and other forms of acute fevers, in which the patient [illegible] time awake, continually speaking [illegible] rapidity, and [illegible]ing to rise, [illegible]

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symptoms will subside about the fourth day, when the suppurative process commences in the wound, then the patient will feel only his real strength, unaided by diseased excitement of the nervous system; in which state he will scarcely be able to raise his hand, although, perhaps, four or six hours only after his escape from his bed, in opposition to two or three men.

In this excited stage of fever, arising from local injury, it is of the utmost importance that you should ever recollect the natural period of its termination, and avoid severe bleedings and purgatives, which it is more than probable, may cause the patient to sink afterwards for want of power to carry on the suppurative and restorative processes. It is extraordinary that this fever, or at any rate, one apparently similar in its symptoms, attending some forms of madness, will continue for a long period before it subsides, or destroys the patient. In this case, the fever shows itself different in its effect upon the constitution, and, no doubt, requires a different treatment; for in the symptomatic inflammatory fever, the excitement, or the life of the patient, must give way in from four to six days, or soon afterwards.

When the nervous energy is unduly determined to ny organ, from a recent cause, the other organs are s susceptible to irritation; thus I am convinced we may factorily explain why the bowels are not so readily l acted upon by aperient medicines, when some ease is going on in another part of the system. s of children have constantly exemplified to

mental occupation as by muscular action. They take their dinner soon after their return home, instead of resting, for the nervous energy to equalize itself over the body, agreeably to its habits in a quiescent and healthy state of the system. Their appetites are never keen; the stimulus of food enables them to go on long after it is prudent to leave off; also, some men, very injudiciously, drink much strong beer, wine, spirits and water, or simple fluids, as table beer, soda water, &c. during and after this meal, thereby diluting the gastric juice too much to digest the food properly; consequently they soon become afflicted with some of the symptoms already noticed in the two preceding pages, and disagreeble dreams, oppressive breathing, head-ache, or dizziness and dimness of sight, particularly after stooping. To get rid of these feelings, some will get up early in the morning, and walk or ride before breakfast, and afterwards pursue their usual habits; thus they are sure to increase their maladies. In the treatment of these cases, avoid depletion, particularly bleeding, for the head-ache, &c.; for the practice will only increase the patient's sufferings, whilst moral and simple medical treatment, that I shall hereafter point out, will rapidly remove their oppressive breathing, cough, distended stomach, swollen ancles, startling dreams, head-ache, &c. The contrariety of my practice in these cases, may remind you of G. A. Stephens's parallel between law and physic; "In each you find two "sides to a question, and bad cases in both." However, the effect of the plan will prove satisfactory.

Early rising, or stinting the hours of rest, is a most prolific source of severe indigestion, and of various nervous affections. Most people require eight hours sleep, and some even more; many such persons, either through necessity, or false notion of the advantages of diminishing their hours of sleep, greatly predispose their constitutions to particular affections, or aggravate such as they may be already afflicted with. It is true, some men can do with very little rest, and they rise early in the morning, but they do so, because they neither can sleep or lie in bed; and, according to my observation, many of them are of an irritable temperament, great eaters, and selfish, and not unfrequently become severely afflicted with indigestion and nervous affections, gout, rheumatism, &c.

It is of consequence for you to bear in mind, that growing girls, and women, are differently affected by indigestion, their nervous system being more susceptible to irritation than is common to men; consequently, we have with them very different assemblages of symptoms, produced by slight causes. They are, however, of a nervous character, and so fickle that they simulate in the same patient, within a short period, numerous trivial or serious affections, and can only be classed under the head of hysteria, in its most comprehensive sense, which we shall defer attempting to describe; suffice for the present to notice, that the influence of heat irritates the skin, and determines the nervous energy unduly from the interior of the body to the surface; thus indigestion follows, pain in the left or

right side, more or less fixed to a space about the size of a crown piece, or pain in the forehead or at the back of the head, cold feet or toes, cold fingers, with the nails pink or blue, the nose pinched, the tip cold and blue, the bowels flatulent, murmura ventris, sore throat, sense of suffocation, sickness, copious secretion of limpid urine, and frequent micturition; or, on the contrary, which is probably the most common, the urine is small in quantity, high coloured, and offensive, with very painful micturition, dysuria, or ischuria, a total suppression; swelled ancles; timidity, palpitation of the heart, emotions and passions from trivial causes, capriciousness, talkativeness, apprehension of death, often shedding tears or laughing, pains in some of the joints, or in some other part of the body, often very severe, but, like all nervous pains, absent during sleep; skin cold and clammy, bowels relaxed, and readily acted upon by slight emotion of the mind; but when the nervous energy is painfully fixed in any other part than in the bowels, they are generally obstinately constipated, and the patient is lethargic, and a fit may be ushered in of violent convulsive motions, with privation of all the perceptions, without any particular preluding symptoms. The uterine functions become deranged; but be assured these are not the cause, as is generally conceived, but the consequence, of hysteria or nervous affections. The male is liable to hysterical affections as well as the female, and may be alike attacked with hysterical delirium, coma, dilated pupils, stertorous breathing, apparently serious

and alarming symptoms of inflammation of the brain; but they are never so dangerous; also with disordered action of the heart, lungs, stomach, bowels, bladder, kidneys, muscles, skin, joints, and spine, as well as of many other organs of the body, often confounded with other affections. I believe that most of the spinal affections of young persons, that are confined for years, tortured with issues, setons, blisters, and physic for diseased spine, would, on strict investigation, turn out to be nothing more than hysteria, for which such treatment would be highly injudicious. Modern practitioners take credit to themselves upon having simplified the theory and practice of physic, and certainly well they may, if nearly all diseases are to be explained some way or other as *inflammatory*. Thus the apprentice boy and his master are nearly equally competent to treat them, by the uniform practice of bleeding, purging, and starving the patient. I do not, however, wish to imply, that no good has accrued from simplifying our notions of diseases and their treatment; but I certainly do conceive that this has been carried, and is continued, far beyond the line that science and prudence would dictate.

If we trace most medical and many surgical diseases, that come under our care, to their origin, we shall find them to depend upon nervous affection, but which subsequently may terminate in inflammatory action. Inflammation originates in nervous irritation, of which there is an infinite variety of degrees, usually comprehended in our common notion of inflammatory action—quick-

ness of pulse cannot depend upon the blood in any state, for it has no power of action; nor can effusion of serum or lymph occur, without the consent of the nervous energy excited into that state by some appropriate stimuli applied to the nerves of the blood vessels. Thus we must also account for an undoubted fact, that the pulsation of an irritable or an inflamed part is quicker than that of the general regulator of the pulse, the heart, or of the arteries of any other part not so unduly excited by nervous irritation. If the pulse be generally quickened, so must the action of the heart, either by the influence of the nerves, supplying it with energy, being irritated, or the nervous system being generally morbidly influenced. Fever is nothing but an affection of the nervous system, showing itself more or less on particular parts.

Hysteria, or nervous affection, modifies the symptoms of other diseases, and sometimes they are converted into hysteria, whilst, on the other hand, hysteria terminates occasionally in a different disease. The hysterical symptoms that I have already enumerated, form but a very inconsiderable number of the whole. Besides, they constantly vary in different persons, and in the same individual at different times; thus, one patient will have a difficulty of breathing—another of swallowing, from spasm of the pharynx—another will lose the voice—another will have sickness, and retention of urine—another will have pain in the head, or in some of the joints, or in the spine, generally in the articulating

substance, or in some other part of the body. These pains affect parts either in the vicinity or distant from the local affection; for you must understand, that nervous pains are carried in two ways—from the brain to the body, and from the body to the brain. Such affections should not be mistaken for inflammation, as they may be detected by making ourselves acquainted with the history of the patient's case, and by recollecting the following characteristic signs of hysteria. Hysterical pains come on very gradually, and without inflammation, which may be known by the circumstance of slight pressure on the affected part giving more pain than greater pressure does, which probably may not give any pain; and being more acute when the patient's attention is directed to the part affected during the examination, and not even felt, if you adroitly direct the patient's mind to some other unconnected subject during your examination; when you may freely handle the affected part without inconveniencing the patient. There is frequent metastasis, or shifting of hysterical pains; and they never disturb the patient's sleep, when probably the symptoms are absent; for I have observed that an hysterical stiff joint is only so whilst the patient is awake, and is freely moved during sleep, and so may a part very painful when the patient is awake, be freely pressed, &c., when asleep. Indeed, all other hysterical affections are more or less absent during that state. A cold pinched nose is a characteristic mark of hysteria; also blue nails, cold fingers and feet, or rather the toes; nausea, sore throat, suf-

focating sensation, tympanites, and spasm. These symptoms, together with the history of your patient, and the presence of some of the symptoms already noticed, should always guide you in making a correct diagnosis between these affections and inflammation in any part of the body.

I have thus endeavoured to sketch several conditions of the body, and circumstances that, either immediately or remotely, influence it in the healthy and diseased states; because you will readily conceive that, by a just appreciation of them alone, we can be said to understand the true bearing of any form of morbid condition, which is necessary before we can possibly conduct their treatment upon scientific principles.

In no cases are these principles of greater importance than in distortions and deformities of the human body, in well distinguishing the characteristic signs which a distortion of the spinal column, or sternum, produces in the functions of certain organs immediately contiguous to the seat of disease, from the consequences upon remote organs. Hence the remedies which may be proper for the cause when single, may become, to a certain extent, inadmissible, or require various modifications, when an influence over the functions of other organs is also exerted. Therefore you will bear in mind that the examples of cases and of their treatment, that I shall hereafter select for illustration, are only for the purpose of pointing out general principles, and not to set up a rule to be invariably minutely observed.

In all cases it is necessary to correct or remove the exciting causes, or that which perpetuates the affection, and the several morbid conditions in union with the causes, in which the real danger exists in the early stages, because they lead to urgent symptoms, as by pressing upon nerves which supply important organs to continue their functions, which are necessary for health, or the life of the individual.

In my next Lecture, I shall describe irritable or diseased states of certain organs, produced by an affection in that portion of the spinal column from whence such organs derive their nerves, and some general morbid states of the nervous system from a similar cause; and, in due time, various other causes that influence this important system, and the symptoms which characterises those disorders, and the mode of distinguishing them from inflammatory diseases, together with their appropriate mode of treatment; and finally, the pathology of various affections of the spine, distortions of the limbs, and malformations, with their most approved treatment.

During this course of lectures, allow me earnestly to solicit your punctual attendance; and I beg that you will invariably, after lecture, question me upon all matters in which I may have failed in making myself sufficiently intelligible to you. In so doing, be assured you will give me a pleasing satisfaction of your sincere desire to acquire and understand all in your power; so that on your future superintendance in these cases, you may be enabled to " Do unto others as you would they

" should do unto you," which I sincerely hope will be individually your happiness, thereby upholding the dignity of our profession; for its rank in society depends in a great measure on its scientific character: and those who are desirous to advance it in the estimation of others, would do well to bear in mind, that whenever its connection with science is dissevered, it must sink to the level of meaner occupations.

THE END.

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*First.*—An inquiry into the nature of nervous energy, and the variable susceptibility of certain organs to be influenced by it in a healthy state through the different stages, from the earliest to the latest period of human life.

*Second.*—The varied susceptibility of certain organs of the body to be influenced by morbid stimuli, excited either by hereditary, constitutional, local, moral, physical, or accidental causes, to constitute morbid irritability, or disease of an organ, or more; and the usual habits of certain organs to sympathize morbidly with each other, at different stages of life, and the variety, according to the nature of the disease, or accidental cause.

*Third.*—The characteristic symptoms of excessive presence of nervous energy, in contradistinction to inflammatory action, and its natural tendency, under certain circumstances, to continue a nervous affection, or to terminate in inflammatory action, and consequent varied changes of organic structure.

*Fourth.*—The characteristic signs of insufficient supply of nervous energy to some organs, either as a consequence of its undue concentration in others, or from general depressing or local causes.

*Fifth.*—The cause of insufficient supply of nervous energy, as well as morbid excess of it, simulating inflammatory action, and the influence of the constitution in modifying the effects of both.

*Sixth.*—The various morbid states of the brain, spinal chord, and certain nerves, which are directly, or by reflected sympathy, capable of producing insanity, hypochondriasis, epilepsy, St. Vitus's dance, hysteria, tic douloureux, convulsion, rheumatism, and faintings; also certain affections of the heart, lungs, kidneys, bladder, uterus, stomach, large and small intestines, swelled legs and ulcerations, and the appropriate treatment of the whole.

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FELLOW OF THE ROYAL COLLEGE OF SURGEONS, LONDON,
&c. &c. &c.

Commences annually his Course of Lectures on the

## MEDICAL PRACTICE

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## OPERATIONS OF SURGERY,

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Further particulars may be known of Mr. EVANS RIADORE, at his residence, 73, Harley Street, before twelve o'clock, or after six o'clock, p. m., when he is at home for consultations.

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